Rocky Mountain Medical Journal

Title Registered, U. S. Patent Office

Publication Office
835 Republic Building, (1612 Tremont Place), Denver 2, Colorado
Telephone AComa 2-0547

Ownership and Sponsorship: The Rocky Mountain Medical Journal is owned by the Colorado State Medical Society and is published monthly as a non-profit enterprise for the mutual benefit of the organizations which jointly sponsor it. It is published under the direction of the Board of Trustees of the Colorado State Medical Society, assisted by an Editorial Board representing the sponsoring organizations. It is the Official Journal of the Colorado State Medical Society, the Montana Medical Association, the New Mexico Medical Society, Utah State Medical Association, the Wyoming State Medical Society, the Rocky Mountain Medical Conference, and the Colorado Hospital Association.

Manuscripts: Scientific Articles, Case Reports, etc., from any state for which this is the Official Journal should be submitted to the Scientific Editor for that state as named in the Editorial Board, above. Other material from any participating state should be submitted to the Associate Editor for that state as named above. Manuscripts from outside the Rocky Mountain area should be sent direct to the Journal office. Manuscripts must be typewritten, double or triple spaced, using only one side of each sheet. It is the policy of this Journal to omit bibliographies.

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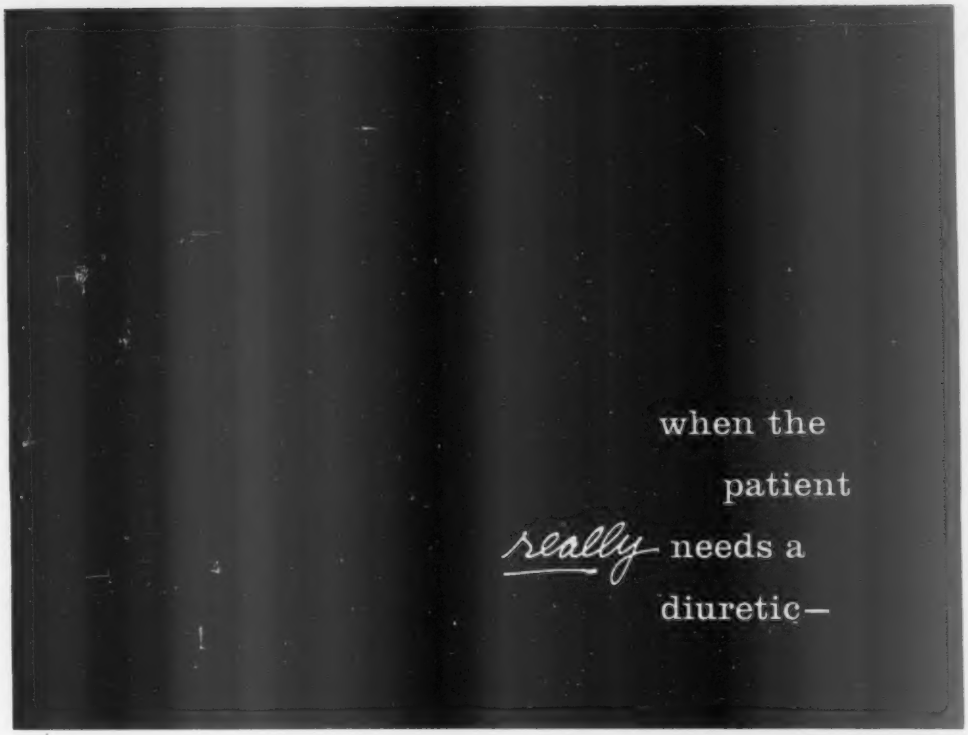

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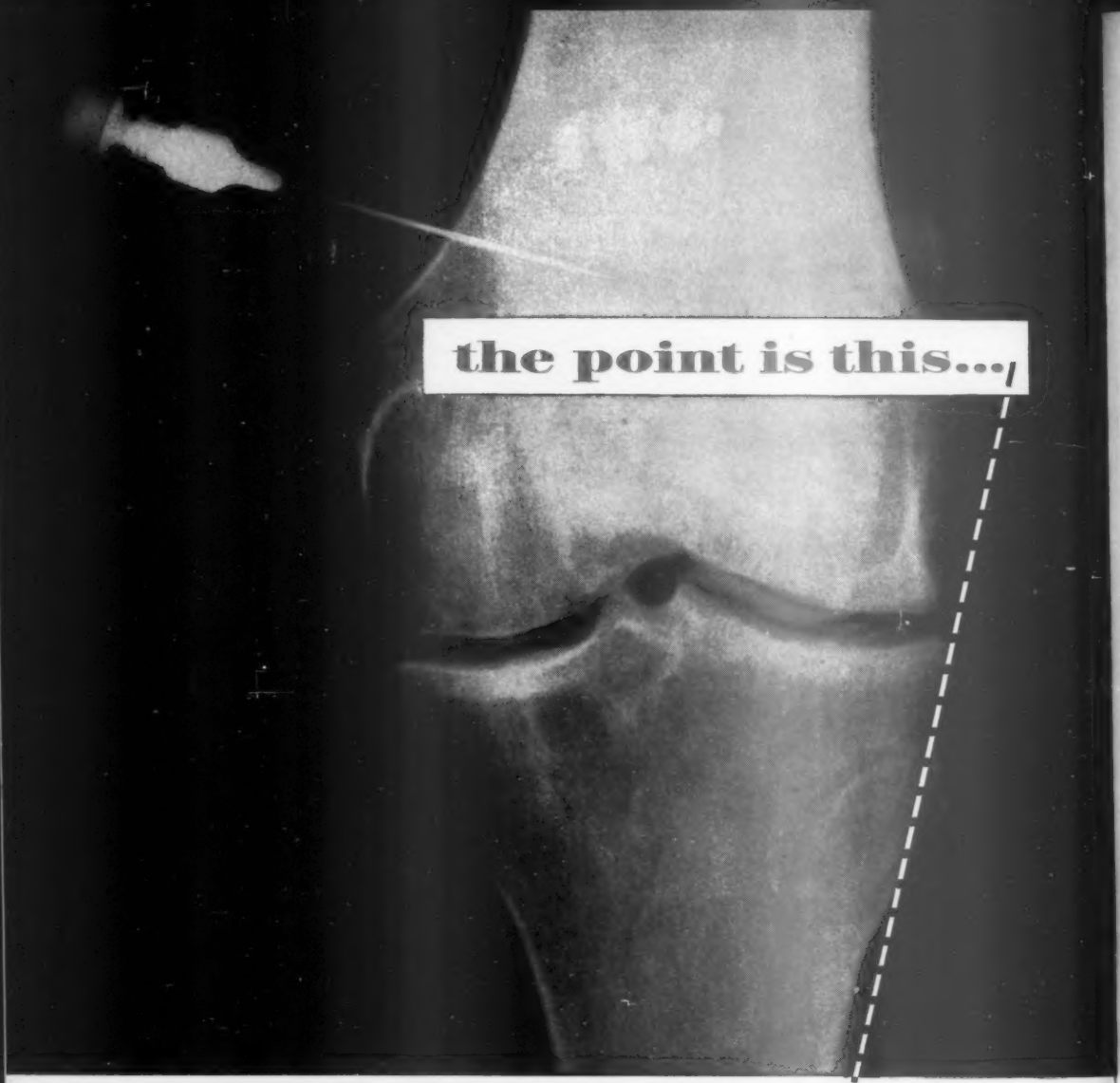

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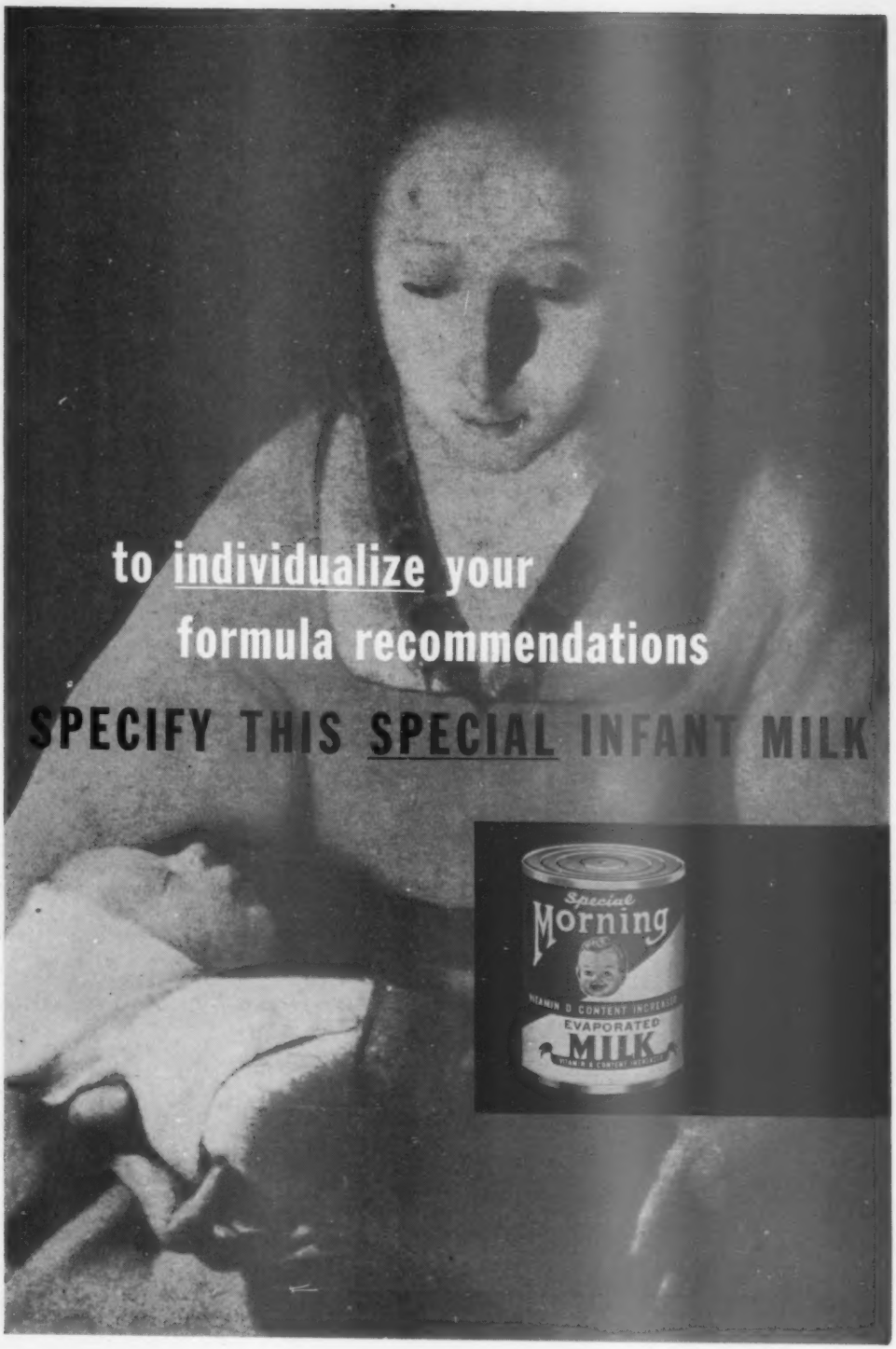
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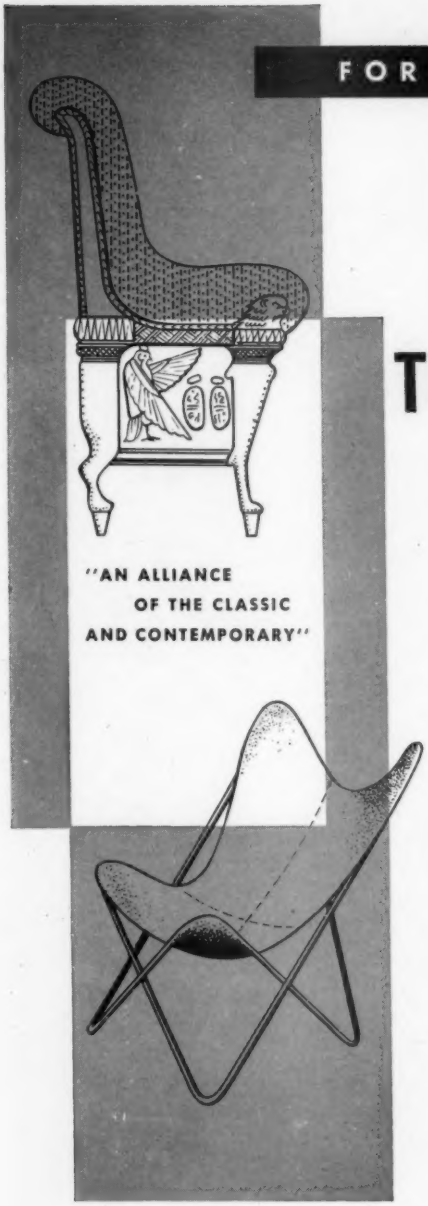

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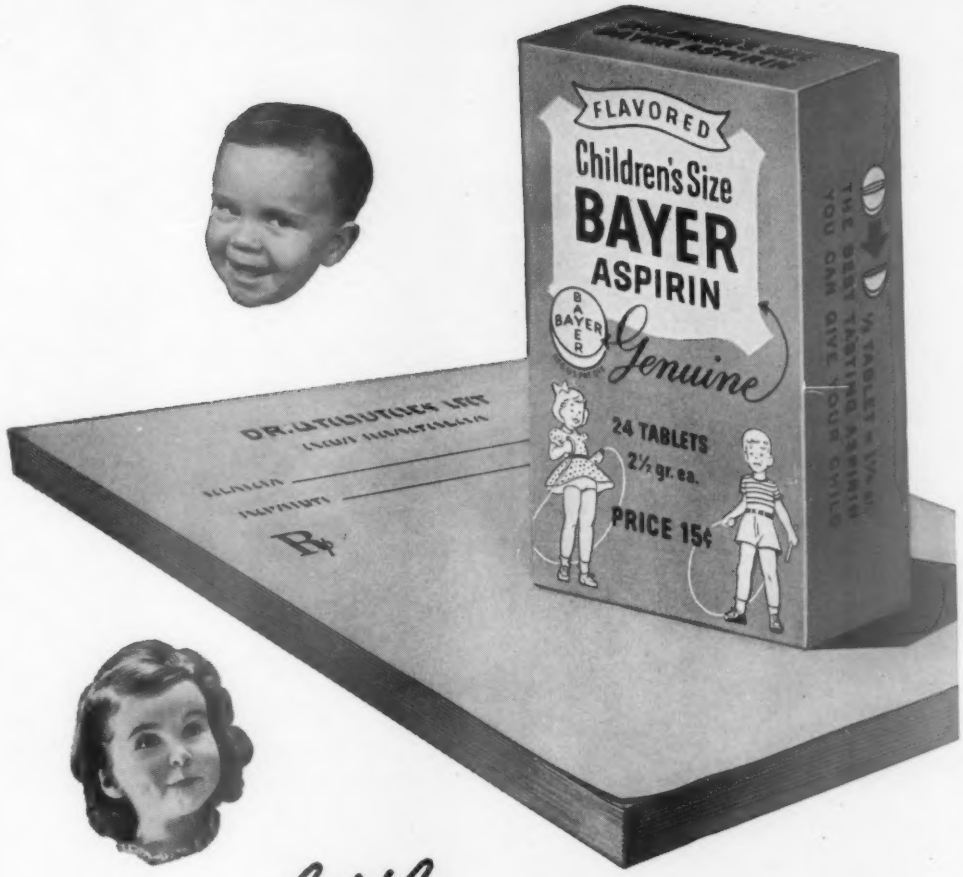

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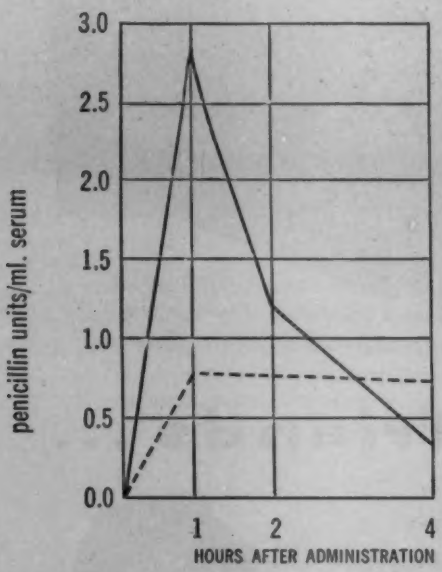

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1. Wright, W.W.: Personal communication.
2. Price, A.H.: Personal communication.

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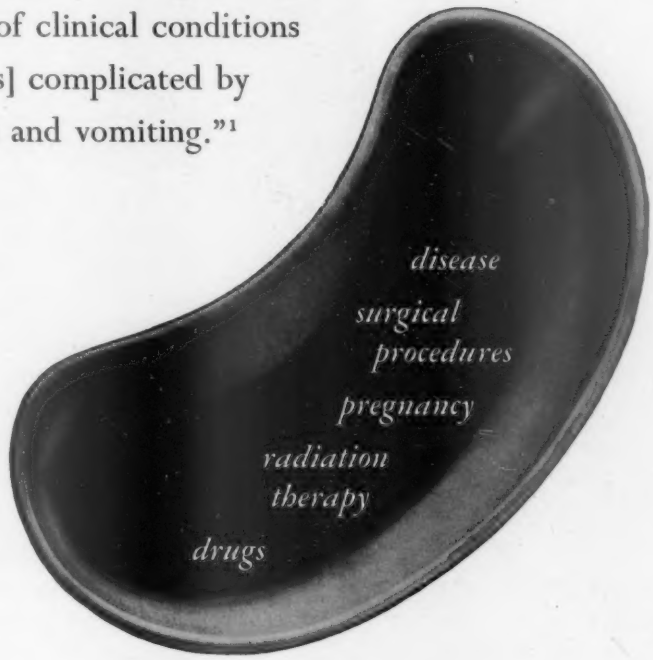

1. Moyer, J.H., et al.: Arch. Int. Med. 95:202 (Feb.) 1955.

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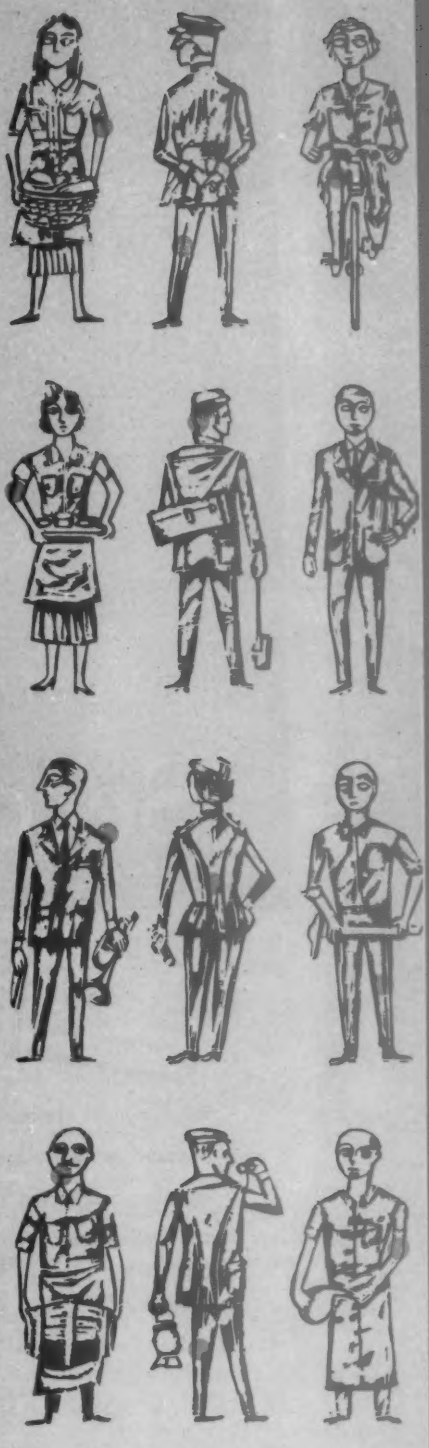

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Rocky Mountain Medical Journal

MARCH, 1956

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WHILE Presidents and Past Presidents of the United States declare that America needs more and better medical service, we have seen no good, concise definition of what comprises good medical care. People do not engage a non-lawyer to handle important legal problems nor an individual unfamiliar with composition and structure to build his house; yet many trust matters of health and life to those who are not physicians. In so doing, health or life may be sacrificed. Yet notice the frequent "Death in Committee" of state legislation designed to protect the people against incompetent so-called healers. This is among other subjects which should warrant consideration at the national, rather than at the state, level.

Big Issues Before Us

Let us glance at the typical hospitalization prepayment plan. The average patient thus protected now pays 11 to 40 per cent of his hospital bill, according to the Health Information Foundation, which also reports that typical subscribers to the surgical plans pay 25 to 40 per cent of the costs of surgery. Many people think medical and surgical fees are too high, without considering the rising cost of everything else. Apparently they don't mind the cost of things they enjoy, but they resent rising cost of things from which they do not derive pleasure. Costs of food and clothing, as well as luxuries, have risen from 100 to 150 per cent in fifteen years, while health care has not increased over 75 per cent. The physician receives 28 cents of the nation's health dollar; drugs take 18 cents, hospitals 26 cents, and minor incidentals take the rest.

The average physician receives $3.75 an hour for fifty-six hours' work per week. How about the TV or kitchen gadget repair man or plumber who receives $7.50 for one hour of their time during the day and $15.00 at night! Also how about the physician's life expectancy of 57 years compared with the average male expectancy of 69. And what about his average earning period of twenty-five years compared with the forty-four in other fields. What other businesses or professions still give of their time without charge to teach the young man to come out into the world of competition? In industry, more and more, plans are providing for retirement and annuities for faithful employees. Many physicians have nothing left, after taxes, to protect themselves with a retirement program.

Among answers to the above problems, it is natural to explore the field of voluntary health insurance, especially against catastrophic affliction of middle income families. It will be interesting to note what insurance carriers bring out in the shape of policies with varying "deductible" clauses and lower premiums. Also, improved hospital facilities for young doctors in rural practice, plus more and better schools for their children, may keep more highly trained physicians in smaller communities. Such legislation as the Jenkins-Keough bill would provide tax relief for self-employed professional people as well as some sort of retirement income.

Despite fabulous economic times, which may or may not last, care of the indigent, the aged, and disabled people will always be with us. Sometimes the challenge of all

these problems to our profession is great indeed. We hope that progressive and necessary legislation will be invoked, but may we always avoid the pitfalls of governmental medicine. In any event, may private and individual incentive always predominate in America—with a minimum of governmental control and obligation of the people and medical institutions thereto in matters concerned with health and life.

Constant Improvement

A Medical journal, like anything else managed by humans, must go forward or backward—there is no standing still. Your Editorial Board reaffirmed its adherence to this principle last month at its annual meeting, authorizing a number of style changes which we believe will constantly improve this Journal through 1956 and the future, always toward modernizing and keeping up to date. You may have noticed our recently modernized style of headings, and as the months roll by you will probably notice other modernizing changes. We always appreciate comments and constructive criticism, so let us hear more from our readers.

Are We Gullible?

AN EXCELLENT editorial appeared in the January, 1956, issue of the Journal of the Medical Society of New Jersey. The author comments upon the therapeutic nihilism of twenty-five and more years ago, when there were only a few "specifics" and practically all drugs were under suspicion. Then in 1925 came insulin, then ephedrin, and in 1935 the beginning of the sulfa era. In 1943 came ACTH, then streptomycin. Instead of nihilists, we became optimists; vitamins, antihistamines, antibiotics, and antispasmodics are going through the mill (and down the drain) in great quantities—if not in the same capsule. We haven't time to sift the wheat from the chaff in glamorous brochures which in some instances represent research "poorly designed and badly controlled." Mental impressions, superior confidence, and emotional effects have not been ruled out. Placebos may do more good than antihistamines for the common cold in one series, and either will apparently do less well than aspirin in another.

None of us means to criticize our colleagues in the pharmaceutical industries; we owe them our lifelong loyalty and appreciation. But what has happened to our five senses and our critical diagnostic and therapeutic acumen?

"Has the pendulum gone too far? Has a now discredited therapeutic nihilism been smothered under a naive therapeutic gullibility? A little skepticism may clear a lot of air—much of it hot"

Free Enterprise And Philanthropy

WE SHALL never forget the big news on the medical front for 1955 — announcement by the Ford Foundation of its giving a half billion dollars to hospitals, medical schools, and many universities. History holds no greater single philanthropic account. A.M.A. President Elmer Hess stated that the gift is "inspiring and heartening to all those who are dedicated to alleviating human suffering, saving lives, and improving the health of mankind." The American people are grateful, and it is hoped that other foundations may be inspired to help relieve the plight of many of the Nation's medical and other educational institutions. The American Medical Education Foundation, founded in 1951, has been sponsored and financially supported by the A.M.A. It has raised nearly five million dollars for the medical schools, of which there are eighty-one approved, from physicians.

The Ford Foundation represents a fount of free enterprise, and it is taking much pressure off the government for more and higher taxes. The ninety million dollars for approved medical schools will be a great help in improving the teaching and research. Benefit to humanity will be great, and our gratitude perpetual.

Management of Carcinoma of the Breast in Pregnancy And Lactation*

Harry M. Nelson, M.D.
DETROIT

CARCINOMA of the breast, complicated by pregnancy or lactation, unless treated early, carries such a grave prognosis that it warrants our constant vigilance. Though once considered inoperable, it is now known to be curable if early diagnosis is made and prompt and adequate surgery is instituted. Unlike uterine cancer, breast malignancy, even though small in size, is too often the problem of a disseminated disease. When it is localized, pregnancy and lactation do not appear to affect the cure rate. The success of treatment depends, then, largely upon how early the treatment can be instituted. During the pre- and postnatal period, the physician is afforded an excellent opportunity not only to do frequent physical examinations but also to teach the patient methods of self-examination of the breast. He must assume the responsibility of diagnosing malignant disease in association with pregnancy and see that adequate treatment is started at once. It is regrettable that the majority of breast malignancies are found only after considerable delay when the mass is of large size and axillary or distant metastasis has occurred.

Breast cancer during pregnancy and lactation is a relatively rare complication. The incidence varies slightly with individual experience. However, we may expect two to three per cent of all mammary malignancies to occur during pregnancy and lactation.

During the past six-and-a-half years, we have had eight such cases at Woman's Hospital. There were in that period 32,000 deliveries (an incidence of 1 to 4,000 deliveries). Three cases were recorded in the previous sixteen years. Of these eleven patients, eight were found to have distant or axillary metastasis at the time of definitive treatment. White found only forty-nine breast carcinomas among four different obstetrical services with 161,624 pregnancies (approximately three cases of breast carcinoma per 10,000 pregnancies).

In spite of metastasis and the presence of the pregnancy or lactation, the prognosis is not always hopeless, as will be shown by the following representative cases illustrating the extent and management of various grades of the disease.

CASE REPORTS

Localized Mass in Breast Early in Pregnancy

A 35-year-old, gravida IV, para III, first noticed a lump in her left breast two weeks prior to admission to Woman's Hospital in 1946. Clinically, this was thought to be a fibroadenoma but a breast biopsy revealed a grade III medullary adenocarcinoma. An immediate mastectomy was performed. No axillary metastasis was found. The patient was four months pregnant at the time of surgery. Her recovery was uneventful and she was delivered of a normal, living infant at term. There has been no evidence of recurrence of the malignancy to the present time (nine years).

A second patient, aged 27, with a localized tumor was operated upon in 1946. She was in the 18th week of her third pregnancy at the time of the biopsy and radical mastectomy. There was no extension of the growth. She delivered spontaneously at term. Since then there has been no recurrence. Five years after the radical mastectomy, castration was performed by her family physician. Why, I do not know.

These two cases represent the reward of prompt biopsy of all breast tumors occurring

*Presented before the Ninth Annual Rocky Mountain Cancer Conference in Denver, July 13-14, 1955. The author is Past-President, American Cancer Society; Chief Gynecologist, Woman's Hospital; Associate Professor of Gynecology, Wayne University College of Medicine.

during pregnancy. Since clinical evaluation of a breast malignancy is so notoriously poor and the deleterious effects of pregnancy so marked, we think there is no excuse for procrastination in obtaining a biopsy of these breast lesions. It will be noted that these patients were allowed to carry their pregnancies to term and that no further treatment was given.

Lesion With Axillary Metastasis

A 37-year-old, gravida V, para III, was admitted to the hospital in 1933 in labor in her 39th week of pregnancy. On routine examination a hard, 4 cm. mass was palpated in the upper outer quadrant of the left breast. The patient stated she had first noted this tumor one month previously. At the time of delivery, a breast biopsy was done. It was found to be malignant. Four days later, a radical mastectomy was performed. Several axillary lymph nodes were found to contain extensive metastatic growths. She made an uneventful postoperative recovery. Deep x-ray therapy was started within ten days. The patient has remained well with no evidence of recurrence to the present time. A 22-year-old survival with axillary metastasis! The present knowledge of the hormonal effect on certain malignancies might have tempted us to treat a similar patient today by castration and/or androgens.

A 34-year-old woman, who was a gravida III, para, II, was four months pregnant when she was admitted to the hospital in September, 1949, with a history of a tumor of the left breast for one month. On examination, a 7 cm. mass in the breast as well as a 2 cm. mass in the left axilla were discovered. X-rays of her chest were negative. The frozen section revealed a malignancy and a radical mastectomy was performed. Numerous axillary metastases were found. Two weeks after the radical mastectomy a bilateral salpingo-oophorectomy and hysterectomy were performed as a prophylactic procedure. This was carried out at the request of the patient and her husband with the understanding that it was probably not of any therapeutic value. X-ray therapy was given after the operation. Nearly five years later, there is no evidence of recurrence. Here, then, are illustrations of two patients, both with extensive axillary metastasis who have survived twenty-two and five years, respectively. Again it is seen that a breast malignancy during pregnancy should be treated exactly as those in the non-pregnant. Deep x-ray therapy is of some therapeutic value in the postoperative period in those with axillary metastasis.

Inflammatory Carcinoma of the Breast

A 20-year-old woman, gravida I, para O, was admitted to the hospital via ambulance during the eighteenth week of her pregnancy. One month prior to admission, she had noticed a diffuse, reddened, tender swelling of the left breast. She had been treated with external applications, sulfa and penicillin. The growth had soon spread to the opposite breast, to the skin of her chest, to the axillary and supraclavicular glands. She was weak, dyspneic, and confined to bed. A diagnosis of inflammatory carcinoma of the breast was confirmed by biopsy. There was obvious lung involvement and other distant metastasis. As a palliative measure, she was given x-ray therapy to both breasts with a total dosage of 6,160 roentgens. One-hundred milligrams of testosterone propionate were given daily. The breasts regressed rapidly in size and the patient improved rapidly. She was discharged from the hospital after a month—active, comfortable and able to conduct her household duties. She continued to receive 100 mg. of testosterone three times weekly. In her twenty-ninth week of gestation, there was evidence of more extension and she was re-admitted. She had developed a blood dyscrasia and, in spite of daily blood transfusions, it was impossible to raise her hemoglobin above eight grams. At the thirty-first week of gestation, the patient was delivered by cesarean section of a normal, living child. Bilateral oophorectomy was done at this time. The ovaries were replaced by a metastatic growth. There was also evidence of a spread throughout the peritoneal cavity. The patient failed rapidly after the cesarean and expired on the seventh postoperative day.

In this case we were able to salvage a living, normal child. She was not aborted because we were certain her survival could not be long. We do not know whether testosterone might have produced an abnormality, as claimed by some, had this child been a female. Five per cent of malignancies occurring during pregnancy or lactation are of the inflammatory type. Lee[1] states that this lesion can be differentiated from abscess by external irradiation to the breast and axilla, but we prefer the rule of DaCosta[2], "In any case of supposed mastitis persisting for more than two weeks, biopsy is indicated to rule out inflammatory carcinoma."

Generalized Carcinomatosis

A 29-year-old, gravida II, para, I, was four-and-one-half months pregnant when she was admitted to the hospital because of malaise, weight loss, and severe, constant back pain. X-rays of the spine, pelvis, ribs, skull, and humerus showed osteolytic lesions in all these bones. This led us to believe there was a primary carcinoma, probably in the breast. After several careful examinations, a very small tumor was found in the right breast. The biopsy showed what we believed to be the primary carcinoma. The patient aborted the day after the biopsy was performed. Because of the extent of the metastases it was obvious this was

not a radio-therapy or surgical problem. She was placed on 100 mg. of testosterone propionate every other day. There was a slight symptomatic improvement after two weeks, but the bone metastasis extended. It was decided that further palliation was possible only by complete eradication of all sources of estrogen, namely, bilateral oophorectomy and perhaps later adrenalectomy. Because of the extreme debility of the patient, these procedures were carried out in three stages, approximately three weeks apart. Nine days following the third operation, the patient was able to sit up for the first time in over three months. She continued to improve and was discharged walking three weeks later. She remained ambulatory and comfortable for about two years. The patient became careless about taking her cortisone and it was necessary to hospitalize her twice to correct the adrenal-cortical insufficiency.

Occult or latent carcinoma, as in inflammatory carcinoma, leaves no hope for cure but active and heroic treatment may give excellent palliation in some cases. This patient is one in which androgens and surgical castration have their greatest usefulness. We were dealing with an unusual and exceptional case here. The procedures followed should be confined to those institutions where adequate clinical research can be done and where the adrenal-insufficient patient can be cared for.

Lesions During Lactation

A 34-year-old, Gravida II, para II, who was admitted to the hospital in June, 1955, because of a 5 cm. firm mass in the upper outer quadrant of the right breast. She had breast fed her baby until prior to admission. On questioning, the patient stated she had noticed the mass early in pregnancy and during her period of lactation. A chest x-ray showed no evidence of metastasis. Radical mastectomy was performed after a positive frozen section. Two large involved axillary nodes were found in the lower axilla. There was probably some vascular invasion by the malignant cells. This patient has been started on deep therapy, and because of the extent of the growth and the question of vascular permeation, a surgical castration was done.

There was both a patient and a physician's delay in this case. The patient knew about the lump for some three months before she called it to the attention of her physician. And the physician delayed action for a period of four months.

A 39-year-old woman, gravida II, para, I, was delivered in March, 1954. She had breast-fed her baby. When she was three weeks postpartum she noted a small mass in her left breast. The following day, frozen section of the excised 2 cm. mass revealed a grade III, medullary carcinoma, and radical mastectomy was performed. No axillary metastasis was found. The postoperative course was uneventful and no further therapy (i.e., x-ray or castration) was given. There is no evidence of recurrence to the present (15 months later).

Geschickter[3] found that patients, during the first half of pregnancy, had noticed symptoms for an average of six months before the diagnosis was made, but in those diagnosed during the last half of pregnancy, the average duration of symptoms was eight-and-one-half months. Thus, much of the reputed deleterious effects of pregnancy on the malignancy must be placed on the neglect by the patient and/or her physician. It is admitted that the increased fullness of the breasts at this time makes diagnosis more difficult, and that the lesions become advanced.

Comment

In this review of the management of carcinoma of the breast in pregnancy and lactation, we have studied eleven cases from Woman's Hospital in Detroit. Four of the eleven have survived five years or longer, two with no axillary metastasis and two with axillary metastasis. Two of the other patients have been treated recently.

Smith[4], in a ten-year review of malignancies occurring during pregnancy seen at Memorial Hospital in New York, found that about half of these were of the breast. The next most frequent site was the cervix. From Harrington's[5] survey of over 4,000 cases of carcinoma of the breast, ninety-two (2 per cent) occurred during pregnancy or lactation. Eighty-four per cent of those pregnant or lactating had axillary metastasis, compared with 63 per cent for the entire series. Eighty-one per cent were found to be grade three or four, indicating a higher degree of anaplasia at this time.

It is generally thought that the deleterious effects of pregnancy are due to the early age of the patient, the increased vascularity of the breast, and the intensity of endocrine influences, resulting in an increased rate of growth and spread of the malignancy. Haagensen[6], however, in reviewing 1,000 cases of carcinoma of the breast, found survival rates varied very little with the age of the patient. Another important factor thought to be responsible for the poorer prognosis is the difficulty in detection of a mass in the presence of the increased full-

ness and size of the breasts at this time. Geschickter[3] found in most cases the duration of the cancer exceeded the duration of the pregnancy. The duration of symptoms averaged six months in the tumors observed in the first half of gestation and eight-and-one-half months in the second half. The size of the growth was between 4 and 6 cm. in diameter at the time of the first examination. It is clear, then, that thorough examination of the breasts, as part of the prenatal care of every patient, and prompt biopsy of every breast tumor found during pregnancy, should be done.

The presence of axillary metastasis is the most important factor in determining prognosis. Harrington[5] found the five-year survival rate in those pregnant to be 61 per cent, in the absence of axillary metastasis, compared to 72 per cent in those not pregnant. If axillary metastasis were present, the five-year survival rate fell to 5 per cent compared to 28 per cent in those not pregnant. Geschickter[3] thinks that, if inflammatory carcinoma is excluded, the survival rates of breast malignancies occurring during pregnancy are comparable to those in the nonpregnant and nonlactating.

The question of therapeutic abortion in these cases is invariably raised and, as yet, there is no unanimity of opinion. In 1953, Cheek[7] made a survey of current opinion regarding the value of therapeutic abortion and concluded that abortion was indicated if the lesion were discovered during the first half of pregnany. However, Hachman and Schreiber[8], in a report of twenty cases occurring during pregnancy, did not observe any difference in prognosis in those aborted or allowed to go to term. They state that "whether aborted or delivered at term, the evolution of the disease is not changed in early cases properly treated. No benefit is observed from therapeutic abortion. Stress, therefore, should be laid on the extent of the disease and prompt treatment, the indications being similar to those of noncomplicated cases." We think that if axillary metastasis has not occurred, nothing is to be gained by interruption of the pregnancy. In the presence of metastasis, abortion can only be considered as a palliative procedure in association with surgical castration.

Subsequent Pregnancies

White[9], in a review of the world literature, found the gross survival rates of patients treated for carcinoma of the breast who became pregnant later, to be comparable to or better than the gross survival rates of patients without pregnancy. In general it may be stated that those patients not having axillary metastasis at the time of surgery may undertake pregnancy after three years of no recurrence. If axillary metastasis has been present, then the patient is advised to wait at least five years before considering further pregnancies.

Treatment

Definitive radical surgery, including thorough dissection of the axilla, should be undertaken as soon as possible, if cure is to be anticipated. Simple mastectomy is indicated solely for palliation in the clinically inoperable, and this therapy should be individualized. In general, the following methods of treatment are available: x-ray, androgens, castration, interruption of the pregnancy and, in selected cases, bilateral adrenalectomy. Some of the new chemotherapeutic agents have been used with some success in palliative treatment. It has been shown that there is no detrimental effect to the fetus from this treatment. Androgen is indicated for relief of pain due to bone metastasis only after irradiation will no longer control it. As mentioned earlier, interruption of the pregnancy should be done only at the request of the patient and her husband, in an effort to give some palliation and to prolong her life. Surgical castration soon after radical mastectomy will benefit one-third of the patients who have evidence of metastasis.

Summary

Examples of the usual problems in management of carcinoma of the breast in pregnancy and lactation have been presented. It is clear that the treatment of this complication of pregnancy is the same as in the non-pregnant and non-lactating patient. Prognosis is dependent, primarily, on the extent of the disease at the time of surgery

and not on the age of the patient, the pregnancy, or the degree of anaplasia of the tumor. There is lack of uniform opinion regarding the practical aspects of this problem. The number of cases observed by any one investigator is small.

The principles of management can be summarized as follows:

1. Early detection and prompt treatment are paramount if cure is to be effected. A radical mastectomy should be performed on a presumably localized lesion. If there is no axillary metastasis, abortion or castration is of questionable value. Probably three years should elapse before another pregnancy is permitted. There is, of course, a calculated risk.

2. The young age of these patients and the degree of anaplasia are not deterring factors in prognosis, but the presence of axillary metastasis decreases the five-year survival rate to 5 to 10 per cent. If there is axillary metastasis, the radical mastectomy should be followed by x-ray therapy. Castration should be reserved, ordinarily, as a therapeutic and not a prophylactic measure.

3. Inflammatory or generalized carcinomatosis is, of course, incurable. Palliative treatment can now keep some of these patients comfortable for a period of time. Since interruption of pregnancy does not alter the prognosis, every effort should be made to carry the patient along until the baby is viable.

4. Judicious use of Androgen therapy often gives relief.

5. Interruption of pregnancy is not indicated in the absence of axillary metastasis. In the presence of axillary metastasis, interruption of the pregnancy can only be considered as a palliative procedure in association with castration.

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Poisonings in Childhood*

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IN THE United States each year, accidental poisoning is reported as the cause of death in over 400 children under the age of five years. The actual number probably is considerably higher than this, however, since many deaths due to poisoning undoubtedly are not recognized as such. Moreover, unless the possibility of poisoning is considered, the diagnosis is likely not to be made even at autopsy since routine postmortem examinations usually do not include toxicologic analyses.

Although a definite history of the ingestion or inhalation of a potentially toxic substance usually is readily available, correct diagnosis occasionally is dependent upon careful questioning directly oriented toward specific possibilities for exposure, or upon the recognition of the pharmacologic and/or physical properties of the compound involved. Thus, in the absence of an exposure history, establishment of poisoning as the correct diagnosis in cases of obscure illness is dependent upon a high index of suspicion. Unfortunately, the

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possibility of intoxication too often is neglected. Since the course of a number of poisonings is fulminating, early and accurate diagnosis and the institution of specific therapy may be necessary to avoid a fatal outcome.

Dependence upon the toxicologist for chemical identification of the substance involved usually is fraught with potentially dangerous delay. Probably the most tragic aspect of unrecognized poisonings which terminate fatally is the realization that, in many instances, death might have been prevented by the administration of specific antidotes or the use of other methods which, though less specific, are based upon sound pharmacologic consideration. The following case seen at this hospital illustrates this well:

A 2-year-old white male was entirely well until the morning of admission. He had left the house for a few minutes, then returned for his nap. No symptoms were apparent upon his return. He began crying one hour later and was found to be "limp," perspiring profusely, and "foaming at the mouth" and to have marked slurring of speech. His face was flushed and pupils markedly constricted. At the time of admission, six hours after the onset of illness, temperature was 103; pulse, 140; respirations, 28; blood pressure 70/40. He was deeply comatose. Respirations were accompanied by marked retraction, but cyanosis was not present. Pupils were pin-point in size. Copious secretions were noted in the pharynx. The neck was supple. The expiratory phase of respiration was prolonged and there was occasional wheezing. Bubbling rales were heard diffusely. The extremities were flaccid. Routine laboratory examinations were essentially normal. The white blood count was 5900 with a normal differential. The spinal fluid was normal in all respects. Cultures of blood and spinal fluid were sterile. The initial impression was "possible encephalitis."

Shortly after admission, "twitching" movements of the eyelids and fingers were noted. Generalized clonic convulsions followed and were controlled with phenobarbital. After approximately twelve hours, respirations became grossly ineffective and the patient required artificial respiration. Despite intensive supportive measures, his condition continued to deteriorate rapidly and he appeared moribund. Sixteen hours after admission a telephone call from the referring physician provided the information that the patient's grandfather had been spraying fruit trees during the day. Later he found that the spray nozzle, ordinarily coated heavily with dried insecticide, appeared to have been "licked clean." The spray contained Parathion, an organic phosphate insecticide. Immediately upon receipt of this information, intensive atropinization was begun, but the child expired within a few minutes. Postmortem examination failed to reveal any other possible explanation for the child's illness and death.

One must be careful not to accept a negative history—even after careful questioning and investigation—as proof of the absence of poisoning. This was well illustrated for us by a recent case which is presented with the kind permission of Dr. Esther Gross:

An 18-month-old male infant was entirely well until immediately prior to admission when he awakened from his nap, vomiting. Marked lethargy and "heavy breathing" were described. Shortly thereafter, a generalized convulsion occurred and the child was admitted to the hospital. The possibility of poisoning was considered, but careful questioning failed to reveal possible exposure, as did a thorough search of the house. The child had not left the house on the day of illness.

At the time of admission, the patient was semicomatose, markedly hyperpneic and flushed. Temperature, 102° F. Physical examination otherwise was not remarkable. Abnormal laboratory studies included: WBC, 35,000 with a slight PMN predominance; 1+ reducing reaction and 4+ acetone in the urine; blood CO_2 combining power, 20 volumes per cent. The blood glucose level was normal and the spinal fluid was normal in all respects.

Early following admission, the child intermittently had generalized convulsions which were controlled with phenobarbital. Despite a negative toxicologic history, suspicion prompted an analysis of the blood for salicylate which was found to be present in a concentration of 82 mg. per cent. Intravenous fluid therapy aimed at correcting the child's acidosis resulted in prompt recovery.

Repeated search of the patient's house still revealed no medications which conceivably were within reach of the child and nothing appeared to have been disturbed. However, questioning of siblings revealed that an older child had dissolved an estimated 35 five-grain aspirin tablets in water and given the solution to the baby to drink. The empty container then was discarded into an outdoor ash-can.

Despite the fact that poisoning was considered a definite possibility a carefully taken history failed to reveal a likely source of exposure. However, as was demonstrated here, intoxication should not be discarded from diagnostic consideration because of a negative history.

Importance of Childhood Accidents

Accidental death in children is a sorely neglected subject about which little is included in medical school curricula. Yet, in 1950 among children between the ages of 1 and 14 years in the United States, there were more deaths from accidents than from the combined total of the seven leading diseases. The deaths from cancer, leukemia, tuberculosis, poliomyelitis, or heart disease — all highly publicized to the lay public—are relatively very few as compared with the number of deaths from accidents.

With the exception of motor vehicle fatalities the type of fatal accident in which a child is most likely to become involved is related to his age. Thus, from birth to one year, burns and conflagration are the most common causes of accidental deaths aside from automobile accidents; between one and two years of age, drownings and poisoning hold second and third positions in incidence. The incidence of poisoning deaths rises very strikingly during the second year of life. It is during this period that accident prevention is virtually completely dependent upon protection of the child rather than upon his education. In other words, the majority of accidents which occur in this age group are directly attributable to the parents for inadequately protecting the child. The child at this age is naturally inquisitive and should be expected to sample anything and everything. The parent who leaves poisonous chemicals within his reach is as surely responsible for the child's poisoning as he would be were the poison administered deliberately. The dangerous and common practice of storing kerosene, turpentine, or other poisonous liquids in old soda-pop bottles is especially to be condemned in this respect. Perhaps even more dangerous is the modern trend—unfortunately encouraged by the medical profession—of marketing aspirins and other medications in the form of candy or of pleasant tasting liquid preparations. The child then is enticed into making a banquet of what otherwise might be sufficiently unattractive to discourage the taking of a dangerous dose.

Incidence of Childhood Poisonings

The substances responsible for poisoning deaths in children under the age of five years were tabulated recently by Bain (J. Pediatrics, 44:616, 1954). Thirty-three per cent result from the ingestion of drugs, most often aspirin; 25 per cent are due to petroleum products (e.g. kerosene), and 36 per cent from material for external use.

In Tables 1 and 2 are shown data concerning the frequency of various types of poisonings as they are seen at the Salt Lake County General Hospital. Table 1 (Page 294) lists the number of patients seen in the emergency ward of this hospital in 1953 and 1954 following the accidental or suicidal ingestion of various potentially toxic substances. There were 479 such cases in the two year period—311 children and 168 adults. Drugs were by far the commonest cause of actual or potential poisoning both in children and adults. Notable among these were the salicylates, especially aspirin, which were responsible for 27 per cent of all cases in children. There was no close second. During the two year period, four persons with poisoning either died in the emergency ward or were pronounced dead upon arrival; two cases involved syanide; one strychnine and one alcohol.

Table 2 (Page 294) is a tabulation of childhood poisoning cases of sufficient severity to require admission to the pediatric service of this hospital in the period from 1948 to 1952. There were fifty-one such cases involving eighteen individual substances. Salicylates again ranked first in incidence with kerosene second. One death occurred in this group; the case of parathion poisoning described previously. (Two additional childhood poisoning deaths occurred in the emergency room during this period; one was due to turpentine and the other was thought to be due to coniine.)

Responsibility for Childhood Poisonings

In the period 1948 through 1953, there were nineteen children admitted to the pediatric service of this hospital for treatment of severe salicylate intoxication. Six of these patients developed their intoxication after the accidental ingestion of aspirin; six were given the drug by the parents in the ab-

TABLE 1

Patients Seen in S.L.G.H. Emergency Room Following the Ingestion of Various Substances 1953-1954

Substance	Children	Adults	Total
Drugs:	156	118	274
Salicylates	84	22	106
Barbiturates	13	81	94
Opiates	7	3	10
Ex-Lax	9	0	9
Cough Preparations	7	0	7
Others	36	12	48
Medicaments for external use	16	6	22
Household Articles:	62	7	69
Cleaners, polishes	16	2	18
Bleach	12	0	12
Turpentine, etc.	10	1	11
Cleaning fluid	7	0	7
Cosmetics	4	2	6
Moth repellents	5	0	5
Others	8	2	10
Petroleum Products	11	1	12
Pesticides:	27	12	39
$CuSO_4$ Wheat	13	2	15
Arsenic	2	3	5
Cyanide	2	2	4
Strychnine	2	2	4
Others	8	3	11
Misc. or not specified	39	24	63
TOTAL	311	168	479
Deaths: Cyanide	1	1	2
(4) Strychnine		1	1
Alcohol		1	1

TABLE 2

S.L.G. H. Pediatric Admissions for Poisoning (1948-52)

51 Children	18 Poisons
Salicylate	15
Fuel Comp.	12
Turpentine	5
Sulfa	5
Barbiturate	3
Benzene	2
Bromides	2
Misc.	9

sence, or in excess, of a doctor's prescription; one case represented an adolescent suicide attempt, and the remaining six—one-third of the cases—received the drug, as well as could be determined, exactly as ordered by the physician! In other words, only one-third of the cases actually were accidental. The incidence of iatrogenic salicylate intoxication in small children probably is much higher than is popularly believed. The physician usually takes refuge behind the assertion that his order undoubtedly was not adhered to, despite parental claims to the contrary. However, the prescribing of aspirin, or any other drug, carries with it the additional responsibility of instruction regarding its potential toxicity. Moreover, factors such as inadequate fluid or caloric intake, renal or hepatic disease, etc., which may operate to decrease the particular patient's tolerance for a drug must be appreciated if the drug is to be used with safety.

General Principles of Treatment

1. Identification of the poison should be accomplished as early as possible so that specific measures may be instituted. The container should be obtained since the label may give the ingredients, the name of the manufacturer, and occasionally the antidote, although the latter often is unreliable. In addition, the container may be of value in estimating the dose taken. A telegram or telephone call to the manufacturer or druggist (in the case of a prescription) may provide the needed information.

Rodenticides offer more difficulty in identification at times since they may be picked up by children and a label not found. In such instances, certain characteristics of the compound may be of help. Rat poison in the form of seeds most commonly contains strychnine; in a slate-colored powder, arsenic; in a paste, phosphorous; and in a brown cake, red squill.

2. Lavage or emesis. Most poisons are in themselves emetics. If vomiting does not occur, it usually is possible to induce emesis by stimulating the palate and posterior pharynx with the finger. Emesis should be produced, if possible, before lavage if the child has eaten recently or if the poison is one expected to be slowly dissolved and was ingested recently, since such particulate matter may not be recoverable through a lavage tube. *Emetics should never be used in a comatose patient nor in caustic alkali or kerosene poisoning.*

Emetic drugs rarely are necessary and should be used with caution. Emetics act either centrally or reflexly by irritation of the gastric mucosa. With the former type, medullary stimulation occurs first and may be followed by depression. It is possible, therefore, to increase the severity of symptoms if poisoning is due to a drug affecting the central nervous system. In the few cases where an emetic drug is justified, apomorphine hydrochloride (1 mg. subcutaneously or 3 to 6 mg. orally) or syrup of ipecac (1 to 4 teaspoonsful) may be given. In the home, effective emetics may be prepared by mixing one teaspoonful of powdered mustard or two teaspoonfuls of salt in a glass of warm water.

Gastric lavage is more certain and thorough, if done adequately, than the production of emesis alone. Lavage is contraindicated in cases of caustic alkali ingestion where perforation of the stomach or esophagus is a danger, in strychnine poisoning until convulsions are well controlled, and probably also in kerosene poisoning where dangers from aspiration are great. A large tube should be used. The child should be placed on his side with the head down to prevent aspiration. Lavage should be continued until the fluid returns clear. Where indicated, chemical antagonists to the poison may be introduced through the lavage tube to inactivate poison left in the stomach. Before removing the tube, it should be pinched to prevent aspiration of its contents into the lungs as the end of the tube passes through the hypopharynx.

3. Chemical antidotes are used to inactivate, or render non-absorbable, poison remaining in the stomach. A number of effective and more-or-less specific chemical antidotes are available for certain poisons. These are listed in Table 3 (Page 296). Chemical antidotes, for maximum effectiveness, should be administered at the earliest possible moment.

TABLE 3

Chemical Antidotes

Poison	Chemical Antidote
Acids	Weak alkali (milk of magnesia, baking soda)
Alkalis (Lye, etc.)	Weak acids (vinegar, lemon juice)
Alkaloids (morphine, nicotine, strychnine, physostigmine)	Potassium Permanganate 1:10,000
Ferrous sulfate	Sodium bicarbonate
Fluoride	Calcium chloride, 5 per cent (or lime water or milk)
Formaldehyde	Dilute ammonia water, 0.2 per cent
Iodine	Starch solution
Mercury bichloride	Sodium formaldehyde sulfoxylate, 5 per cent
Phenol	Olive oil
Phosphorus	Copper sulfate, 0.2 per cent or potassium permanganate, 1:10,000

When the nature of the poison is unknown, the "universal antidote" may be safely used. This is prepared as follows:

Pulverized charcoal (burnt toast).....2 parts
Magnesium oxide (milk of magnesia)..1 part
Tannic acid (strong tea).....1 part

The charcoal is capable of absorbing large amounts of a number of poisons such as strychnine and phenol; the tannic acid precipitates alkaloids, certain glucosides and many metals; the magnesium oxide neutralizes acids.

Potassium permanganate is useful against a variety of poisons because of its oxidizing properties. It rapidly destroys strychnine, nicotine, morphine, physostigmine and phosphorus, but is ineffective against caffeine, pilocarpine, cocaine and probably atropine. It should not be used in a concentration greater than 1:10,000. If tablets are not available, 1:10,000 solution may be prepared as follows:

Dissolve ½ teaspoonful of crystals in a pint of water. This will make a 1 per cent solution. Dilute 2 teaspoonfuls of this mixture in a quart of water. Concentration then will be approximately 1:10,000.

4. Physiologic antidotes are compounds which combat some of the physiological effects of a poison after it has been absorbed. A number of the more-or-less specific physiologic antidotes are listed in Table 4.

With both the chemical and physiologic antidotes, it must be remembered that overzealous use of these compounds may re-

TABLE 4

Physiologic Antidotes

Poison	Antidote
Arsenic, mercury, bismuth	BAL, 3-5 mg./kg. I.M. every 3-4 hours.
Cyanide	Amylnitrite inhalation pending sodium Nitrite, I.V., 7-15 c.c. of a 3 per cent solution at 2-5 c.c. per minute followed by 30-50 c.c. sodium thiosulfate, 25 per cent solution given over 10-15 minutes.
Fluoride	Calcium gluconate, 2-5 c.c. of 10 per cent solution slowly I.V.; may be supplemented by 2-5 c.c. I.M.
Fluoroacetate ("1080")	Monoacetin (glycerol monoacetate), 0.1-0.5 c.c./kg. I.M.
Lead	"Versene" (EDTA), up to 0.5 gm./30 lb. I.V. in a 3 per cent solution over 1 hr. twice daily.
Nitrites, aniline, chlorates etc., producing methemoglobinemia	Methylene blue, 1 per cent aq. solution, 1-2 mg./kg. I.M. or I.V.
Opiates	"Nalline," 5-10 mg. I.V. slowly every 3-4 hours.
Organic Phosphate Insecticides (parathion TEPP, HETP)	Large doses of atropine I.M. hourly until signs of atropine effect. (0.3-0.6 mg. for a 14 kg. child).
Polymeric phosphates (hexameta-, pyro-ortho-, etc.	Same as for fluoride.
Warfarin	Vitamin K_1 or K_3 ovid, 100 mg. I.V.

sult in iatrogenic poisoning more severe than the condition for which they were intended as therapy.

5. Supportive measures are as important in the treatment of poisoning as the administration of specific antidotes. Moreover, there are very few poisons for which specific antidotes are available, so that the therapy for most is, of necessity, supportive. Shock in a case of poisoning is treated according to the general principles which govern the treatment of shock from other causes. Intravenous fluids with blood or plasma should be used where indicated. These measures, aside from the treatment of shock, are important in facilitating the excretion of many toxins and in protecting various viscera from the toxic effects of concentrated poison. In certain types of poisoning, shock should be anticipated and prophylactic fluid administration begun early; examples are arsenic, fluoride and ferrous sulfate poisoning. Intoxication with substances having a nephrotoxic effect may cause sufficient impairment of renal function to force the judicious limitation of fluid intake, particularly if urine output is not adequate. Oliguria and anuria occur not infrequently following poisoning. The period of oliguria or anuria usually is followed by a period of diuresis if the patient survives long enough; thus, the basic principle of therapy is to prolong the patient's life until the kidneys regain function and diuresis develops. Fluid intake should be restricted and a careful record kept of intake and output. Frequent determinations of hematocrit, along with serial urine volume measurements, will aid in determining whether oliguria or anuria are the result of inadequate fluid administration or renal shut-down. If diuresis does not occure, artificial technics may be necessary. These include peritoneal lavage, the use of the artificial kidney and exchange transfusion. The latter suffers the disadvantage that poison saturating the tissues will be removed only partially and may again reach equilibrium with the blood in toxic concentrations.

Failure to establish and maintain an adequate airway will render all other efforts useless. This may be a particularly difficult problem in the comatose patient. Bronchial and pharyngeal secretions should be removed with suctioning as necessary. The tongue should be prevented from falling back into the pharynx and thus causing obstruction. Pulling the mandible forward, extending the neck and placing the patient in the prone position usually will accomplish this. Where necessary, a patent airway may be maintained with the use of an oral airway or by intratracheal intubation, but these should not be left in place if the patient arouses sufficiently to "fight" the airway. Poisoning associated with the inhalation of irritating fumes or the intratracheal aspiration of irritating substances may result in laryngeal edema; intubation or tracheotomy here may be life-saving. Postural changes should be used in the comatose patient to combat hypostatic pulmonary changes. Oxygen should be administered if hypoxia is likely; however, this does not replace artificial respiration when respirations become ineffective in producing an adequate gaseous exchange. When possible, a mechanical respirator should be made immediately available for patients in whom marked respiratory depression is imminent.

Choice of Stimulants

Sedatives may be necessary for the patient exhibiting central nervous system excitation. Among the barbiturates, phenobarbital is the most efficacious against convulsions because of its selective anticonvulsant action. Other barbiturates ordinarily will not inhibit convulsions except in anesthetic doses and, therefore, are less safe for this use. Paraldehyde and chloral hydrate are additional useful sedatives. Stimulants may be necessary in some cases, but their use should not replace oxygen, artificial respiration and support of the cardiovascular system. Choice of stimulants should be governed by the type of central nervous system stimulation desired:

1. Respiratory stimulants:

   Caffeine—3-4 mg/lb. I.V. or I.M.; may be repeated every 30 to 60 minutes until respirations improve.

   Nikethamide (Coramine)—3 mg./kg. I.M. or I.V.; may be repeated at half-hour inter-

vals. Should be used with caution as convulsions may be induced.

2. Vasomotor stimulants should be used only for vasomotor collapse and never to support a failing circulation when blood transfusion is needed to replace lost blood volume.

   Neosynephrine—0.1 mg./kg. I.M.

   Paredrine—0.2 mg./kg. I.M.

   Nor-epinephrine (levophed) can conveniently be used as a continuous intravenous infusion. It is convenient to have two infusions running so that blood volume and the vasoconstrictor effect can be controlled independently. One vial containing 4 mg. (4 c.c.) may be diluted in 1000 c.c. 5 per cent dextrose and given at an initial rate of 0.6 drops/kg./minute. The rate of infusion must be regulated, however, on the basis of blood pressure readings which should be taken every two minutes until adequate blood pressure elevation is obtained. Thereafter, maintenance dosage, again regulated by blood pressure, most often will be of the order of 2 to 4 micrograms per minute. (½ to 1 c.c. or 12 to 25 drops, per minute, of the above solution).

If shock or vasomotor collapse fail to respond to usual therapeutic measures, adrenal cortical extract (A.C.E.) or hydrocortisone may prove to be of value. A.C.E. may be given in a dose of 3-5 c.c./kg. I.V. followed by 1 c.c./kg. every two hours. Hydrocortisone may be given in a dose of 1-2 mg./kg. I.V. as á dilute solution over a 30 minute period.

3. Cortical stimulants:

   Caffeine has some cortical stimulatory effect but is inferior in this respect to other drugs.

   Picrotoxin—0.1 mg./lb. I.M. (not over 6 mg.); may be repeated every 20 minutes until reflexes return, then p.r.n. Probably the drug of choice in barbituate poisoning if an analeptic drug is needed.

   Amphetamine (Benzedrine sulfate) — 0.2 mg./lb. I.M. (not over 10 mg.). May be repeated every 30 minutes until reflexes return, then p.r.n. Each of these drugs should be used in amounts regulated by the respiratory response and the return of tendon reflexes, and no effort should be made to awaken the patient.

It goes without saying that it is much more desirable to *prevent* poisonings than to treat them. Many of them can be prevented by the alert physician who uses the house call and office visit as an opportunity to educate parents by pointing out the obvious poisoning hazards which he sees in their homes and by stressing the dangers of the use of medications without medical supervision.

Despite all precautions, every physician will see poisoning cases. He should be armed with an understanding of the general principles of treatment and an adequate emergency kit of poison antidotes.

The Surgical Treatment of Biliary Tract Disease*

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PHYSICIANS and surgeons are aware that biliary tract disease is not an infrequent ailment amongst the well-fed citizens of this great nation of ours. Although rare in childhood it occurs just often enough that we must keep it in mind when confronted with certain symptoms. Likewise in adolescence it is uncommon but there is a great increase in its incidence in young adulthood, particularly young women who have recently been pregnant. Beginning in the late twenties and early thirties there appears an increase in the incidence of biliary tract disease as indicated by gallstones that follows a rather constant line that gradually climbs decade by decade so that in the segment of our population over 65 years of age we may expect that over 60 per cent will have biliary calculi. Biliary tract disorders for the most part, over 90 per cent, are associated with gallstones. Today the accepted treatment is surgical. It would appear that the incidence of gallstones in our total population is increasing. Likewise our population is growing so that we are seeing not only an

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actual greater number of patients with gallstones in our hospitals who are there for surgical treatment for some phase or form of biliary tract disease, but they comprise a greater proportion of our daily work in our surgical facilities than ever before.

In order that proper emphasis may be placed on the magnitude of this condition the following observations are pertinent. During the past twenty-two years there has been a progressively increasing number of patients treated surgically for diseases of the biliary tract on the surgical pavilions of The New York Hospital. During the period September 1, 1952, to September 1, 1954, there have been a total of 4,294 operations on the biliary tract. Great progress has been made in the management of biliary tract disease over the past three decades, because it is more readily recognized and there is a better understanding and correlation of its pathology, symptoms, and natural history and the more effective methods by which these may be overcome or alleviated. Such surgeons as A. O. Whipple, Evarts Graham, Waltman Walters, Warren Cole and Richart Cattell have had a special interest in biliary tract disease and have accumulated a considerable experience with it and have contributed to this trend by their written reports. There has been developed an appreciation of a difference in gallstone disease between that appearing in young women recently pregnant and older men and women not previously pregnant, as well as those with blood dyscrasias. The term acute cholecystitis has been established as an entity denoting a phase of biliary tract disease that may occur in any age group and may be accompanied by complications of a serious nature. Studies of postmortem material have revealed that those with gallstones have an increased incidence of associated changes such as arteriosclerosis, hypertension, renal impairment, diabetes and obesity. Surgery alone has become established and accepted as the most effectual type of therapy. Generally speaking, the results are highly satisfactory and are being accomplished with increasing safety and less disturbance for patients than ever before.

Critical evaluation of information upon which a diagnosis of biliary tract disease is made has become more frequent and should be further extended. Following the introduction of cholecystography in 1924 there has been a tendency not yet completely overcome to ascribe almost any complaint referable to the upper abdomen to biliary tract disease if gallstones were evident or if the gallbladder was not well visualized. Thus a clinical history compatible with gallstones and supported by cholecystographic evidence has too often obscured the true cause of the patient's complaints. The careful keeping of records over the years and their periodic evaluation at intervals has done much to keep the surgeons alert to the common mistakes.

In our experience those conditions found to most closely simulate biliary tract disease in order of occurrence have been:

1. Peptic ulcer.
2. Pancreatitis.
3. Coronary heart disease.
4. Hiatus hernia.
5. Renal and perirenal disease.
6. Lesions of the colon.
7. Appendicitis.

There are several important factors that have contributed to the increased success of surgical treatment of biliary tract disease in recent years. Perhaps the most important of these after correct diagnosis has been dealt with are:

1. Preoperative evaluation and preparation.
2. Anesthesia.
3. A careful and thorough operation.
4. Postoperative management.

Preoperative Evaluation and Preparation

Each patient is an individual problem. In addition to his biliary tract disease whether he is normal or whether or not he has associated conditions that may lead to complications during or after operation, is of great importance. Careful preoperative evaluation is followed by steps to correct deliberately any condition that is amenable so that the patient is in as good condition as possible before operation is embarked upon. In biliary tract disease one should always be concerned with the

functional capacity of the liver and its probable reserve under stress of operation and possible subsequent complications. Nutritional disturbances manifested by overweight or starvation are to be recognized and corrected if the operative procedure is to be well tolerated. X-ray examination and electrocardiograms supplementing clinical evaluation of the cardiorespiratory system may provide critical information in the selection of the anesthetic agent. As the proportion of our population in the older age group increases it behooves us to seek carefully for deficiencies and abnormalities as have been mentioned and to correct as accurately as possible dehydration, electrolyte imbalance, hypoproteinemia, diabetes and other conditions that fall in this category.

Anesthesia

Anesthesia has quite properly been accorded more consideration in surgery during the past twenty years. We have employed various types including general, local regional block and spinal. And while specific circumstances render one preferable over another our tendency has been to use general anesthesia except when there existed some contraindication for its employment. There are two important aspects in regard to general anesthesia. The first deals with the selection of the anesthetic agent. Specific consideration is given to the status of the liver and the cardiovascular system. Impaired liver function requires a minimal amount of the least toxic agent available. The damaged liver may be unable to participate in the elimination of the agent. The second and perhaps more important aspect of anesthesia is its administration. The art of providing adequate relaxation to facilitate the operation and at the same time using a minimal amount of anesthetic agent together with a respiratory atmosphere high in oxygen has been developed to a degree unanticipated two decades ago. Postoperative pulmonary complications have been greatly reduced by preventing aspiration of gastrointestinal contents and the removal of excess bronchial secretions by suction during the operation. These have been made possible by (1) evacuating gastric contents before induction and during the procedure by means of an indwelling naso-gastric tube and (2) the employment of the intratracheal tube in all patients being operated upon under general anesthesia.

A Careful and Thorough Operation

In the surgical treatment of biliary tract disease there are several operative procedures that are commonly employed. These include cholecystectomy, cholecystostomy, and common duct exploration that are applicable to the majority of patients and then those less frequently indicated such as reconstructive operations for obliteration to bile flow in the ductal system or short circuiting procedures directed at the same problem, and extensive and more radical operations for neoplasms. Cholecystectomy is the operation most frequently indicated and performed. We have done 3,862 cholecystectomies in the treatment of 4,181 patients with nonmalignant disease of the biliary tract. It is a procedure that requires meticulous care because if the common duct is injured the patient's health and life expectancy is more greatly jeopardized than if surgery had not been undertaken. Anomalies of the blood vessels and bile ducts are numerous and no structure should be divided before unequivocal identification has been established. The operative procedure should be thorough and complete. A long remnant of a cystic duct should not be left behind since such may be the cause of recurrent symptoms. Thus the cystic duct is dissected to its actual junction with the common duct and then secured and divided one-half centimeter from it. We favor removal of the gallbladder from the fundus toward the cystic duct because it is felt that there is less likelihood of injuring the common duct. This we accomplish by first identifying the cystic duct and dissecting it to its junction with the common duct. A ligature is then placed about it for identification and traction. Next the cystic artery is dissected free to its origin, usually from the right hepatic, and then temporarily occluded by ligature near its junction with the wall of the gallbladder. The gallbladder is then dissected from the fundus downward

exercising great care to stay within the capsule of the gallbladder bed and not to injure the liver. If scarring is present it is considered preferable to open into the gallbladder rather than to penetrate the capsule or injure the liver. The temporary occlusion of the cystic artery renders this a relatively bloodless procedure. As the cystic artery is encountered it is secured and permanently ligated.

Reperitonealization of the gallbladder bed is done only when this can easily be accomplished without creating a dead space. If the gallbladder has been removed without damage to the liver and vessels and accessory ducts ligated as encountered drainage from this surface is of no significance. Bringing the peritoneal margins over an injured surface may not prevent its further weeping.

We continued to place a drain extending from the region of the cystic duct remnant along the course of the gallbladder bed and through a stab wound in the flank, not through the operative wound.

Cholecystostomy

Cholecystostomy is a procedure that is of great value in patients for whom for one reason or another cholecystectomy seems unwise. For example, in the elderly patient with acute cholecystitis whose general condition demands that as little as possible be done to obviate impending catastrophe. Cholecystostomy performed under local anesthesia provides for decompression of the biliary tract and averts the danger of perforation and its possible complications with minimal disturbance to the patient. It is truly a temporary procedure and cholecystectomy should be performed within a year when the patient's condition is optimum for the more major procedure. We have been able to study a group of 130 patients who have had cholecystostomy.

Common Duct Exploration

Our stated indications for exploration of the common duct are:

1. Palpable stone within the common duct.
2. Thickened wall of the common duct.
3. Dilated common duct.
4. Dilated cystic duct.
5. Presence of, or history of, jaundice.
6. Frequently when there is thickening or induration of the head of the pancreas.
7. Frequently when patients are over 65 years of age.

Unless there is a contraindication such as the condition of a patient being precarious or an existent cholangitis, cholangiography is recommended whenever the common duct exploration is decided upon. Both procedures add considerable to the operation; they should not be entered into lightly. They should be done with great care when undertaken. In performing cholangiography at operation two objectives are fundamental. The first is the complete filling of all the patent ductal system and second the securing of roentgenograms that visualize the ductal system without overlay of the opaque material that may obscure any part. To accomplish this, oblique views that demonstrate the lower end of the common duct in its entirety separately from the duodenum are essential.

Exploration of the common duct was done in the early part of the period of the past twenty years, in less than 10 per cent of patients. This has been and continues to increase so that now it approaches 17-18 per cent. Our indications remain the same but the mean age of the patients has increased. Stones are recovered in about 50 per cent of those explored.

Postoperative Management

Early mobilization immediately after operation, i.e., standing at the bedside as soon as the patient has recovered from the anesthesia and walking periods every four hours thereafter, we believe, has reduced the postoperative complications since we first began it now almost ten years ago. Of course, better anesthesia has contributed immeasurably to a reduction of these complications also. Chemotherapy is employed only on indication. Over a twenty-two year period the average period of hospitalization has been reduced from fourteen to eight and a fraction days.

Diet after operation has been an object of special study that has resulted in changes.

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Food by mouth is begun as soon after operation as tolerated. On discharge patients are instructed not to eat large amounts and not to allow themselves to become over-hungry. Small meals at short intervals have been successful in keeping patients comfortable. No special restrictions are placed upon fat intake. A well-balanced diet that maintains the individual's normal weight is recommended.

The persistence or recurrence of symptoms that are similar to those prior to operation are an indication for intensive reevaluation. We are reluctant to employ the term "post-cholecystectomy syndrome" because we have found a specific explanation sufficiently frequent such as an overlooked peptic ulcer, common duct stone or a cystic duct remnant to feel that such a diagnosis is justified only after prolonged study.

Results

The surgical treatment of nonmalignant biliary tract disease associated with gallstones is highly satisfactory. We consider that over 90 per cent of patients are relieved of their presenting symptoms. Likewise the surgical treatment of acute cholecystitis with or without stones is equally gratifying. However, cholecystectomy for presumed chronic cholecystitis without stones is followed by unpredictable results; less than 65 per cent could be considered as having been definitely improved. The risk of surgical therapy is portrayed in the following table.

Mortality Rate by Age Groups on 4,181 Patients Following Surgery for Nonmalignant Disease of the Biliary Tract

Age	No. of Patients	No. of Deaths	Mortality Rate
Under 50 years	2,389	15	0.6%
50-64 years	1,432	34	2.4%
65 years and over	360	25	6.9%
TOTALS	4,181	74	1.78%

These figures are strong evidence in favor of early surgical treatment in biliary tract disease before the complications of longstanding gallstones develop and before those conditions commonly accompanying old age have appeared.

One cannot dwell upon the surgical treatment of biliary tract disease today without touching upon a few of the controversial questions. Time will permit little more than mere mention of a few of these with an indication of our stand in regard to them.

Asymptomatic Gallstones: It has long been known that many individuals at postmortem are found to have stones in the biliary tract with no available history that they had produced symptoms during life. This gave rise to the term "silent gallstones." Over the past twenty years a greater proportion of our population, particularly those over 50 years of age, periodically undergo complete clinical evaluation, including cholecystography. Unsuspected cholelithiasis is thus demonstrated. Many surgeons are asked to see these patients in consultation. Our attitude at present is to recommend cholecystectomy unless there is some contraindication. One cannot predict the future course of the "silent stones"; they may cause an obstructive acute cholecystitis of a rapidly fulminating type in the older age especially. The surgeon should consider the risk of operation in the light of possible complications that may occur in patients with biliary calculi including carcinoma.

Acute Cholecystitis: This phase of biliary tract disease may be accompanied by complications of a serious nature such as perforation and local or generalized peritonitis. We have observed that these are more prone to occur in the extremes of age, the very young and those 65 and over. The early surgical treatment in any age group we believe to be in the best interests of the patient since it provides the best protection against the untoward complications and at the same time is our most effectual method of interrupting the course of biliary tract disease. Over a period of twenty-two years we have operated upon 848 patients with acute cholecystitis with an operative mortality of 2.9 per cent.

Carcinoma Arising from the Extrahepatic Biliary Tract: In patients with carcinoma of the ampulla of Vater, we believe pancreato-

duodenectomy or similar more extensive radical resections are indicated in all cases in which excision of the gross tumor seems initially possible. Although the immediate postoperative mortality and complication rate is high, the palliation provided those patients who survive is longstanding and effective. The absolute curability is probably not greatly affected.

The prognosis in patients with carcinoma of the gallbladder and extra-hepatic biliary ducts is not greatly improved by the adoption of radical surgical procedures. Prophylactic cholecystectomy for all geriatric patients with symptomatic biliary tract disease can be justified on the basis of the danger of malignancy. This, to us, appears to be the most reasonable line of approach to this problem.

Biliary Tract Disease in the Aged: The age factor in the surgical treatment of biliary tract disease in our experience is of great importance. Among patients under 50 years of age the rate of fatal complications in nonmalignant disease of the biliary tract has been 0.65 per cent. Among patients 50-64 years this rate is 2.4 per cent; and among those patients over 65 years of age it is increased to 6.9 per cent. For elective surgical procedure the difference in mortality is not significant. The high mortality rate among aged patients occurs following emergency surgery. Thus the complications of acute cholecystitis in the aged patient with degenerative disease are the chief factor in the operative risk. Surgery should be done in older patients with acute cholecystitis; but they merit the most meticulous care in surgical management. This includes operation as early as possible in an acute attack before complications such as perforation, stone obstructure, jaundice, etc., appear. Our experience appears to justify the policy of regarding all calculus cholecystitis, whether symptomatic or not, as a potential hazard and an indication for elective cholecystectomy. Unique aspects of biliary tract disease in the aged include: (a) an increased incidence of acute cholecystitis; (b) an increased incidence of choledocholithiasis with larger and more numerous calculi; (c) the occurrence of acute processes in the biliary tract with minimal signs and symptoms, and (d) the increased incidence of associated biliary tract neoplasia.

Relief of Painful Syndromes—Importance of Intraspinal Tumors As a Cause*

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PAIN is an outstanding symptom of intraspinal tumor. The pain of intraspinal tumors may occur in certain regions in which there is a coincidental pathologic process, such as disease of the gallbladder, an ovarian tumor, a fibroma of the uterus, appendicitis, a thoracic tumor or a bony lesion of the extremities. Removal of the associated lesion under these circumstances, however, does not relieve the pain.

Diagnostic Procedures

To aid in distinguishing the pain caused by intraspinal lesions from that caused by organic lesions of the thorax, abdomen and extremities, many diagnostic procedures are available. None of these can begin to compare with a careful and thorough neurologic examination. For such an examination, it is necessary to have the patient disrobe completely. The physician must consider

*Read at the meeting of The American College of Surgeons, Sun Valley, Idaho, April 19, 1955. From the Section of Neurologic Surgery of The Mayo Foundation, Rochester, Minnesota, which is a part of the Graduate School of the University of Minnesota.

any change from normal in the many reflexes, in the response to cutaneous stimulation by touch, heat and cold and in the strength of the muscles. Roentgenologic examination of the spinal column also is frequently of great value in demonstration of the presence or absence of changes in the bony structure caused by inflammation, previous trauma, erosion and tumors.

Another valuable diagnostic procedure is examination of a specimen of cerebrospinal fluid obtained by lumbar puncture. The physical, chemical and cytologic characteristics of the cerebrospinal fluid may furnish the evidence necessary for the diagnosis of an intraspinal lesion. Additional examination for changes in pressure, after an increase in intracranial pressure resulting from compression of both jugular veins, will determine whether or not subarachnoid block is present. This prevents free circulation of the fluid in the subarachnoid space.

If pain is present and examination of the cerebrospinal fluid discloses an abnormality, it is often difficult to localize the lesion of the spinal cord. For further localization of the lesion, iodized oil can be used. When this opaque substance is injected into the subarachnoid space, it collects at the level of the block, and this level can be determined by roentgenographic examination. Another careful neurologic examination often is important after removal of cerebrospinal fluid, inasmuch as levels of sensory disturbances may become apparent, reflex changes may take place, and muscular weakness may occur. Even with the application of all the diagnostic procedures at the physician's command, it still may not be possible to demonstate any sign of a neurologic lesion. In such an instance, when an intraspinal lesion is suspected, examination should be repeated at frequent intervals before any drastic therapeutic measures are used for the relief of pain.

Character of the Pain

The pain of an intraspinal lesion may precede any other symptom of the lesion by months or years. It may be constant or intermittent. Its chief characteristic is that it occurs when the patient is at rest, and it is relieved by exercise. The character of the pain is almost pathognomonic if it is intermittent but is always localized over the same nerve roots. It is usually lancinating, and is aggravated by coughing, sneezing, lifting and straining at stool. It invariably awakens the patient four to six hours after he has retired. It often becomes so severe as to compel the patient to walk the floor or to sleep in a sitting position. Unfortunately, many patients are treated for neuritis, muscular rheumatism or syphilis, and some have been called "hysterical." The importance of the recognition of the first painful stage of tumors of the spinal cord was emphasized in a recent survey in which 10 per cent of the patients who had root pain had been operated on for some thoracic or abdominal lesion.

Differential Diagnosis

Degenerative or demyelinating diseases of the spinal cord must be considered in the differential diagnosis of intraspinal lesions. Since an intraspinal tumor may be a metastatic lesion, a general examination is important. Of all malignant tumors, carcinomas of the breast and prostate gland are most likely to metastasize to the spinal cord. Since carcinoma of the prostate gland may not produce local symptoms, rectal examination should be made whenever an intraspinal lesion seems to be present in a male. It must not be forgotten, too, that metastatic involvement of the spinal cord may not become evident until many years after the primary tumor has been removed.

Surgical Treatment

Once the diagnosis of a tumor of the spinal cord is established, the treatment is essentially surgical, because the objective is relief of compression of the spinal cord. Of primary importance is the anesthesia for the operation. The proper anesthesia for use during operations on the spinal cord depends on the patient and on the facilities for administration. Most patients who have had a great deal of pain from the intraspinal lesion prefer general anesthesia. However, paravertebral regional anesthesia produced with procaine hydrochloride and epinephrine minimizes the amount of bleeding, but cannot be used for hypersensitive pa-

tients. Since the introduction of thiopental sodium anesthesia by intravenous injection, my colleagues and I have been using it almost exclusively in this type of case with excellent results. The intravenous administration of thiopental sodium is made safer by the use of the Magill intratracheal tube, through which oxygen and nitrous oxide can be administered as an adjunct throughout the operation.

Exposure of the spinal cord at operation is accompanied by so little risk that it can be done routinely in the presence of dysfunction of the spinal cord associated with a distinct sensory level and subarachnoid block, or when the site of the tumor has been established by means of iodized oil. Good exposure of the cord is an essential factor, and, of course, the size and extent of the tumor necessarily control the extent of the laminectomy.

Extradural tumors lie in the space between the vertebral walls and the meninges; they are apparent by the time the laminectomy has been completed. If there is no evidence of compression by an extradural lesion, the dura can be opened and the cord examined for an extramedullary intradural tumor. A silver probe or soft rubber catheter can be gently inserted intradurally to eliminate the possibility of an obstruction, either above or below. Fortunately, the majority of intraspinal tumors are benign and are situated outside the spinal cord.

Intramedullary tumors or others situated within the spinal cord may cause symptoms of compression. Surprisingly enough, decompression of the spinal cord, either with or without a midline incision, produces a good result, particularly in cases in which the tumor is cystic. Benign tumors have been completely removed, and recovery has resulted from decompression by means of laminectomy. Certain pathologic conditions found at operation may simulate intraspinal tumors. Pachymeningitis brought about by tuberculosis, syphilis or other chronic inflammatory diseases may prove to be the cause of the compression. Chronic cystic arachnoiditis may be encountered when the dura is opened. Varicosity of the meningeal vessels may simulate a tumor. This condition may be found adjacent to a tumor, and the diagnosis of varicosity may not be possible until the presence of a tumor has been excluded.

Postoperative Course

Postoperative care has been greatly simplified since the introduction of early ambulation. Previously, patients undergoing laminectomy for the removal of intraspinal tumors were kept flat in bed for two to three weeks. Now, ambulation within the first three to five days is not uncommon; the time of ambulation depends on the previous disability and the ability of the patient to be up and about. Early ambulation has greatly reduced the incidence of vesical complications which necessitate the use of an indwelling catheter for the first few days after operation. Early ambulation also has reduced the need for passive motion and massage, since patients who are up and about can exercise the muscles which are undergoing recovery.

The time required for the complete return of function of the paralyzed muscles is influenced by the duration and severity of the paralysis. As a rule, the time required for complete return of function is a follows: three months or less in cases in which the loss of function is 25 per cent; six to twelve months when the loss is 50 per cent, and as long as eighteen months when it is 75 per cent. In cases in which the loss has amounted to 100 per cent, a complete return of function will occur within two years if the spinal cord has not been injured so severely that motor or sensory function will not return below the level of the lesion. The removal of intramedullary, infiltrating tumors often results in temporary improvement which may last for six to seven years. The surgical mortality rate associated with removal of tumors of the spinal cord is less than 4 per cent.

Comment and Summary

Because it recently has been discovered that obscure pain in the back and in the extremities frequently is due to protrusion of an intervertebral disk, an intraspinal tumor frequently has been overlooked.

Although most intraspinal tumors are

benign, metastatic tumors may occur at this site. The presence of a degenerative lesion must be ruled out before one can make a diagnosis of intraspinal tumor. Careful neurologic examination should be carried out in all cases in which the presence of an intraspinal tumor is suspected.

Roentgenographic examination of the vertebral column often will reveal erosion of bone or intraspinal calcification. The introduction of iodized oil into the spinal subarachnoid space has been of great value in the localization of intraspinal tumors before they have compressed the spinal cord.

Pain is the chief symptom in cases of intraspinal tumor. The pain has the following characteristics: (1) it occurs intermittently; (2) its severity is increased by coughing or sneezing; (3) it tends to occur after the patient has retired; (4) it usually causes the patient to arise early in the morning and sit in a chair; (5) it may be relieved by exercise, and (6) it generally is confined to certain dermatomes.

Intraspinal tumors may be extradural or intradural, and the intradural tumors may be intramedullary or extramedullary. It sometimes is difficult to distinguish an intramedullary tumor from an extramedullary tumor, although early involvement of the vesical and rectal sphincters usually is indicative of an intramedullary tumor. Fortunately, most intraspinal tumors are situated outside the spinal cord. Such tumors produce symptoms by exerting pressure on the spinal cord. Removal of the tumor will relieve the symptoms by removing the pressure on the cord.

Most intraspinal tumors are benign and can be removed. If a benign tumor is removed before it has caused permanent injury of the spinal cord, the operation usually will result in a complete return of the lost function.

Coarctation of the Aorta and Pregnancy*

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COARCTATION of the aorta is a relatively rare lesion, consisting of a narrowing of a segment of the aorta, usually in its thoracic portion. Coarctations fall into two general categories, the pre-ductile or infantile type in which the stenosis occurs proximal to the ductus arteriosus, and the post-ductile or adult variety in which the involved area of aorta is at or just beyond the ductus. The true incidence of this disease is not known, although autopsy series reported by Evans[1] and by Fawcett[2] indicate an average of about one case in every 1,000 autopsies.

The frequency of pregnancy and coarctation occurring coincidentally is also not known. In 1953 Pritchard[3] reviewed the medical literature on this subject and was able to collect seventy-seven reported cases, to which he added two cases from his own experience. Of these seventy-nine cases, seven died from a complication of the coarctation during the prenatal or early postpartum period and another died from peritonitis secondary to a caesarian section. Four of the deaths were due to rupture of the aorta in the last trimester or during labor, two patients died of congestive heart failure, and the seventh patient had a fatal cerebrovascular accident during the eighth month of pregnancy. Thus, the overall mortality for this group was somewhat more than 10 per cent. Certainly there must be many women with coarctation who go through their pregnancy uneventfully and in whom the diagnosis of aortic coarctation is never suspected. Still, coarctation

*This is the 80th reported case of coarctation and pregnancy.

unquestionably adds considerable risk to any pregnancy.

The following case presentation covers both the obstetrical care of a patient with coarctation of the aorta and the later successful surgical correction of the lesion.

REPORT OF A CASE

A 27-year-old white female, gravida III, para II, aborta O, was seen May 27, 1954, for prenatal care. She had been told she had a "heart murmur" in 1936 while being treated for pneumonia complicated by a left empyema which required open drainage. No history of rheumatic fever was obtainable, and there was no family history of cardiac abnormalities. Her first pregnancy was completed without incident in January, 1950, with the term delivery of a healthy 7 lb. 13 oz. male infant. The postpartum course was uneventful. In August, 1951, she had a sudden occlusion of the central retinal artery of the right eye with total loss of vision in that eye. There have been no subsequent cerebrovascular episodes. In October, 1952, her second pregnancy resulted in the uneventful birth of a 9 lb. 4 oz. girl. Significantly, a persistent hypertension was noted throughout both pregnancies.

The patient was a well-developed, well-nourished female who appeared in normal good health. The right pupil was dilated and fixed to light. Fundoscopic examination disclosed the residual changes of the previous retinal artery occlusion. There was an 8 cm. scar over the left seventh rib posteriorly. The lungs were normal on physical examination. The heart was not enlarged and no thrills were palpable. Heart tones were of good quality with regular rhythm. A soft, blowing Grade II systolic murmur was heard over the base of the heart and in the interscapular area posteriorly. The blood pressure was 150/90 in the left arm and on one occasion was recorded as 118/70 in the left leg. At other times the blood pressure was unobtainable in the legs. The femoral pulses were markedly diminished and the popliteal and dorsalis pedis pulses were not palpable. The skin on the feet and ankles was cool to the touch, and the patient stated that she had suffered from cold feet and leg cramps throughout her life. There was enlargement of the uterus compatible with a two months gestation. The remainder of the physical examination was within normal limits.

A roentgenogram of the chest was made which showed a small aortic knob and notching of the lower margin of the ribs (Fig. 1). These findings, coupled with the physical examination, made the probability of a coarctation of the aorta extremely likely.

Inasmuch as her blood pressure was only moderately elevated, it was decided to follow

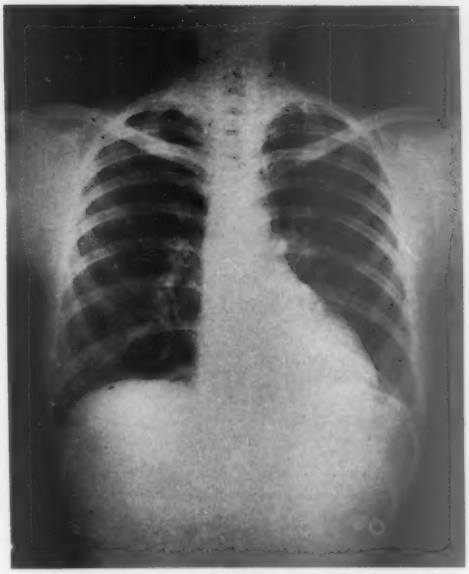


Fig. 1. An x-ray of the chest showed a small aortic knob and notching of the ribs.

the patient closely during her prenatal course and deliver her vaginally at term. She was seen at weekly or bi-monthly intervals until she entered labor on December 12, 1954. During her visits her blood pressure varied from 134/90 to 168/96. Her weight was carefully controlled and she gained only thirteen pounds during her pregnancy. During the seventh and eighth lunar months, she was placed on a low salt diet and activity was restricted to normal daily requirements. No evidence of cardiac decompensation was found.

Around midnight of December 12, she began having irregular uterine contractions. She was admitted to the hospital at 7:20 a.m. with bloody show. Following an admission enema, she went into active labor. Sedation was maintained with Demerol and scopolamine and she was cautioned not to strain or bear down. At 12:45 p.m. the membranes ruptured spontaneously and she was taken to the delivery room with 7-8 cms. dilatation of the cervix. Under gas anesthesia a RML episiotomy was done and a controlled, spontaneous vaginal delivery of a viable female infant was accomplished with pressure from above. The patient was not allowed to push with her pains while in the delivery room. During the second stage her blood pressure rose to 180/100 but fell promptly at delivery to 160/98. The placenta delivered without incident and her postpartum course was uneventful.

Subsequent to her delivery, she was carefully followed in the office. An electrocardiogram was within normal limits. On March 5, 1955, the

left common carotid artery was cannulated and an aortogram (Fig. 2) was made revealing a coarctation of the aorta with moderate post-stenotic dilatation. The left subclavian artery appeared enlarged.

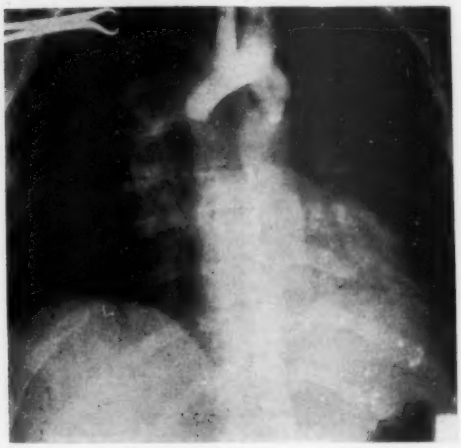


Fig. 2. A retrograde aortogram demonstrated the coarctation.

The patient was again admitted to St. Anthony Hospital and on March 22, 1955, was taken to the operating room for resection of the coarctation. The chest was opened through the bed of the left fifth rib. The pleural cavity had been obliterated by an adhesive pleuritis. After freeing up the lung it was retracted forward, the mediastinal pleura opened, and an adult type coarctation found. The ductus arteriosus was patent, the lumen being about 2 mm. in diameter.

A 2 cm. segment of aorta containing the coarctation and aortic side of the ductus was excised between clamps after the ductus had been ligated (Fig. 3). An end-to-end anastomosis of the aorta was done without difficulty, using a continuous suture of 5-0 silk. The pleural cavity was drained with two No. 28F catheters connected to water-seal bottles, the chest closed in layers and the patient returned to her room in good condition.

Fig. 3. Resected segment of aorta. The probe passes through the ductus.

The postoperative course was uneventful. The chest tubes were removed after forty-eight hours, and the patient dismissed from the hospital on the tenth day after operation. At the time of discharge the posterior tibial and dorsalis pedis pulses were easily palpable and the brachial blood pressure was 124/80. Since leaving the hospital the patient has continued to do well.

Summary

A case of coarctation of the aorta complicated by pregnancy is described. The patient was allowed to carry the pregnancy to term, was delivered vaginally, and the coarctation repaired several months later.

REFERENCES

[1]Evans, P. R. C.: Guy's Hospital Rep. 96:194, 1947.
[2]Fawcett, J.: Guy's Hosp. Rep. 59:1, 1905.
[3]Pritchard, Jack A.: Obst. & Gyn. Survey, 8:775, 1953.

ALL ABOARD FOR A.M.A.'S ANNUAL MEETING IN CHICAGO

Plans are rapidly taking shape for the A.M.A.'s 105th meeting, June 11-15, in Chicago. A.M.A. has lined up nearly five full days of lectures, scientific and technical exhibits, color television and motion picture presentations to give physicians a good "short course" in postgraduate medical education. Between 12,000 and 15,000 physicians are expected to attend the convention which will center its activities at Navy Pier, Northwestern University, and near north side hotels. Headquarters for the House of Delegates will be at the Palmer House.

Some 350 technical exhibits and more than 300 scientific exhibits will be on display all week for the benefit of physicians and guests. The exhibit hall will be open "for doctors only" probably on Wednesday and Thursday mornings.

A few outstanding scientific features already scheduled include: fracture and fresh pathology exhibits; physical examinations for physicians; exhibit-symposiums on traffic accidents and arthritis and rheumatism; special exhibits on cardiovascular diseases and pulmonary function tests.

Physicians should begin now to make plans to attend this worthwhile medical meeting. More details will be published in the Journal of the A.M.A.

A monthly news summary from the nation's capital by the Washington Office of the A.M.A.

All too frequently overlooked in Congressional activity on health and related bills each year are the little-publicized but highly important appropriations measures—without which no program of the Federal Government could move forward. The appropriations hearings in the House (where all money bills must originate) rarely get headlines; they are conducted behind closed doors. Weeks and sometimes months later, the hearings are published, but by then the bill supplying money for an agency has been reported to the House.

It's only when the measure gets to the Senate that private groups and individuals are heard—by then in open sessions. Closed House sessions are not new. That is the way it has been done ever since Congress set up a separate committee on appropriations back in 1865.

The importance of appropriations in running the Federal Government was clearly illustrated when the President submitted to Congress his 1,272-page budget message in which he sought $65.9 billion for all federal programs for the fiscal year beginning July 1.

While there was no over-all total of projected spending by all the agencies in the health field, the budget requests for the Department of Health, Education, and Welfare showed a sharply upward trend. And if certain new legislation is voted on this session—like the projected five-year program of construction grants for medical schools and private laboratory facilities—the total figure for subsequent years is likely to be even higher.

On the medical school-laboratory construction bill, the President asked Congress for $40 million for the first year (estimated cost over five years is $250 million). Construction grants, which would have to be matched on a 50-50 basis, would be available for private medical schools as well as non-federal laboratories conducting research into a wide range of crippling diseases.

The budget message also calls for another $30 million in outright grants to the states to help them in financing poliomyelitis vaccination programs, the same amount appropriated by Congress last session. The administration in a separate request asked for extension of the polio law, from February 15, 1956, to June 30, 1957, and both the House and Senate with only brief debate voted the 17-month extension. Since only half of last year's $30 million was spent up to the February 15 expiration date of the original act, there was no rush for Congress to act on the new account.

Other new spending asked by the administration, contingent, of course, on enabling legislation, includes $10 million for initial capitalization of mortgage loan guarantees for health facilities; $5 million for graduate and practical nurse and professional health personnel training, $3 million for water pollution grants; $1.5 million for mental health expansion programs; and $1 million for sickness and disability surveys in the U. S.

If Congress approves the requests, virtually all segments of the Department of HEW will have more money to spend than in this fiscal year. None would benefit more, however, than the medical research arm of government, the National Institutes of Health. The total sought for the seven institutes is 28 per cent more than estimated spending this year. Here are some examples: National Cancer Institute, $32,437,000, up 29 per cent; National Heart Institute, $22,106,000, up 17 per cent, and the National Institute of Allergy and Infectious Diseases (formerly the National Microbiological Institute), $9,799,000, a 26 per cent increase.

The President requested $130 million for the Hill-Burton hospital-clinic construction program which will be ten years old in August. In this connection Congress has been asked to extend the act for two years beyond next year, and action is expected this session.

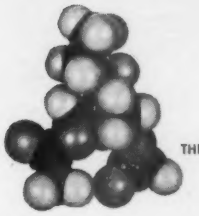
Notes

After a study of possibilities in the peaceful uses of atomic energy, a panel has recommended, among other things, that the U. S. encourage states and private organizations to take full advantage of the opportunities offered by radioactive material for medical research and treatment.

It now appears that an improved and more uniform program of medical care for service families will be adopted this session—possibly before this is published. One feature: A $25 deductible charge in civilian hospitals, but with the government paying the full insurance premium, and a mandatory subsistence charge in military hospitals.

Making slower progress is the plan—under consideration for more than a year—for a health insurance program for U. S. civilian workers. Here the government would pay about half the cost.

Several committees are urging stricter penalties and other changes to bring the illicit narcotic traffic under better control; so far no suggestion of more controls over the medical profession in the handling of narcotics.



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Colorado

Component Societies

BOULDER COUNTY

Drs. George R. Buck, Terry J. Gromer and John I. Zarit visited with the Boulder County Medical Society January 12 at dinner at the Boulder Country Club. Among the many items covered included the problem of polio vaccine distribution in the State.

C. C. ROBERTS, Secretary.

FREMONT COUNTY

A program by Drs. Robert T. Porter, President, and William C. Service, Treasurer of the State Society, was given at the regular meeting on January 16 in Canon City. This program was preceded by a dinner. The Woman's Auxiliary met with the State President, Mrs. James S. Haley of Longmont.

CALVIN M. OBA, Secretary.

LAKE COUNTY

The regular meeting of the Lake County Medical Society was held on January 18 at the home of Dr. Humpf in Climax. Dr. C. Walter Metz, Denver, Chairman of the State Society's Finance Committee, was the guest speaker, discussing the Society's current budget.

JOHN KEHOE, Secretary.

LARIMER COUNTY

The regular monthly meeting of the Larimer County Medical Society was held in Berthoud on February 1. After dinner Drs. Robert T. Porter, President, Colorado State Medical Society, and C. Walter Metz, Chairman, Finance Committee of the Board of Trustees, reported on the status of current national legislation and the finances of the State Society.

W. S. ABBEY, Secretary.

NORTHEAST COLORADO

The regular meeting of this Society was held January 12 at the Sterling Country Club. Following dinner, Drs. C. Walter Metz, Lawrence D. Buchanan and James M. Perkins of the State Society Board of Trustees presented a discussion of State Society projects and finances.

D. J. CLARK, Secretary.

PUEBLO COUNTY

Pueblo doctors entertained the officers of the State Medical Society January 3 at a dinner at the Minnequa Club. Drs. Robert T. Porter, President; George R. Buck, President-Elect, and Leo W. Lloyd, Vice President, discussed socio-economic matters of local and national interest. The dinner was preceded by a cocktail hour given by Dr. John B. Farley.

JOSEPH B. CLUTTER, Secretary.

WASHINGTON-YUMA

At a dinner meeting held in Akron January 27, Dr. George R. Buck of Denver, President-Elect of C.S.M.S., was the guest speaker. He spoke on current problems facing the profession in Colorado. The election of officers was held following Dr. Buck's talk and they are Drs. Park D. Keller, President, and C. J. Bennett, Secretary.

WELD COUNTY

The Weld County Medical Society met February 6 at the Weld County General Hospital. Dinner guests were Drs. George R. Buck, President-Elect, Colorado State Medical Society, and Terry J. Gromer, member of the Board of Trustees. The discussion following dinner concerned Society finances, national legislation and other subjects which were to be brought before the House of Delegates at the Midwinter Clinical Session.

J. J. ZUIDEMA, Secretary.

News Briefs

PUEBLO COUNTY MEDICAL SOCIETY SPRING CLINICS

On Saturday, April 28, 1956, the Pueblo County Medical Society Spring Clinics will be held at the Top O' The Town, in Pueblo.

Guest speakers and their topics are as follows:

"Advances in Medical Research" — Gordon Dempsay, M.D., Los Angeles, California.

"Radio Isotopes Versus Malignancies"—Paul V. Harper, Jr., M.D., University of Chicago.

"The Old Man"—Edward H. Hashinger, M.D., University of Kansas.

"Pelvic Surgery"—Joseph H. Pratt, M.D., Mayo Clinic.

Suitable, unique, relaxing entertainment will be furnished, with dinner at Terrace View, Top O' The Town.

ANNOUNCING THE DATES:

The Western Slope Spring Clinics at Grand Junction will be held Friday and Saturday April 6 and 7, 1956.

Obituary

CICERO L. LINCOLN

Dr. Lincoln died January 7, 1956, at his home following a heart attack. He was born May 26, 1886, in Columbus, Mississippi, and graduated from Mississippi A. and M. College and from Washington University Medical School.

In 1906 Dr. Lincoln came to Denver where he practiced until his death. He was a former President of the Denver Tuberculosis Society, a Vice President of the Denver Medical Society, Medical Director of the Swedish National Sanatorium and a staff member of Agnes Memorial Sanatorium.

At the time of his death he was a member of the Colorado State Medical Society and Denver Medical Society; member of the staffs of St. Luke's and Mercy Hospitals.

Survivors include his widow, Jean Ryall Lincoln, of 221 Magnolia; three sons, Dr. C. L. Lincoln, Jr., Atwell R., and Lt. James F.; a brother, sister and six grandchildren.

AMERICAN GOITER ASSOCIATION MEETING

The 1956 meeting of the American Goiter Association will be held in the Drake Hotel, Chicago, May 3, 4 and 5.

The program for the three-day meeting will consist of papers and discussions dealing with the physiology and diseases of the thyroid gland.

News Briefs

ANNUAL MEETING SPEAKERS, NEW MEXICO MEDICAL SOCIETY

The Seventy-Fourth Annual Session of the New Mexico Medical Society will be held in one of America's most friendly cities, Roswell, New Mexico, May 2, 3, 4, 1956.

Guest speakers for the session will be: Carleton B. Chapman, M.D., Internist, Dallas; John H. Moyer, M.D., Internist, Houston; Ian MacDonald, M.D., Surgeon, Los Angeles; Morris J. Fogelman, M.D., Surgeon, Dallas; Conrad G. Collins, M.D., Obstetrician and Gynecologist, New Orleans; Forrest H. Adams, M.D., Pediatrician, Los Angeles; Dana M. Street, M.D., Orthopedics, Memphis; Robert D. Moreton, M.D., Radiologist, Fort Worth; Vernon E. Martens, Capt., MC USN, Maryland.

Two Panel Discussions

In addition to the scientific papers by the above speakers, there will be two panel discussions. Dr. Collins will moderate the panel on "Acute Anuria" and Dr. Moyer will moderate the panel on "Steriods." All guest speakers will participate on the panels. There will be medical and surgical round-table luncheons on Thursday and Friday.

Friday evening, May 4, has been reserved for meetings of the various specialty groups.

Business meetings, Council, and House of Delegates of the State Society will be held on Tuesday, May 1, and Wednesday morning, May 2. Details of this phase of the session will be announced later.

Special Activities

In addition to the scientific program, the Chaves County Medical Society, convention host, has arranged a round of social activities which should help each doctor to relax. Wednesday evening, May 2, has been set aside for the smoker and Thursday, May 3, will be the annual dinner-dance.

For those who care to do some sightseeing, you will find the charm of the West in Roswell, which is surrounded by thousands of fertile acres of growing crops and is in the midst of one of the best sheep and cattle range sections of the Southwest.

Chief attraction of the Roswell area is world-famous Carlsbad Caverns National Park, located 106 miles to the south. To the east is Bottomless Lakes State Park, a unique phenomenon of both scenic and sport interest,

where boating, swimming, horseback riding and picnicking are enjoyed. To the west, 72 miles, is the world's largest mountain playground, Ruidoso. The nation's highest golf course, 9,000 feet, is only 130 miles southwest of Roswell. Thus, convention participants will have a wonderful opportunity while visiting Roswell to visit some of the most scenic areas of the Southwest.

All physicians who are members of their respective state medical societies are cordially invited to attend.

Room accommodations are available in the Nickson Hotel or one of the many beautiful motels. A list of the motels will be provided in the near future, or write: New Mexico Medical Society, 223-24 First National Bank, Albuquerque.

News Briefs

Medical forums are now getting under way in several communities in Utah. These forums are expressly designed for lay-people with the purpose of acquainting the public with accurate medical information on various diseases and situations common to many.

Carbon County held its first medical forum last month at the Carbon County College Library and the topic for the evening was "Rheumatic Fever." Additional panels will be scheduled in the future. Doctors in the Carbon County Medical Society and some visiting physicians are panelists.

The Southern Utah Medical Society is also scheduling a series of forums at the College of Southern Utah. The subject of the first forum was "Poliomyelitis."

The Cache County Medical Society's forum program includes a series of six meetings, and questions submitted beforehand will receive the attention of the panels for a portion of the discussions.

Salt Lake County Forums

The East High School Auditorium is the setting for Salt Lake County forums, which began February 7. This series will continue each week through March 27.

The consensus of opinion is that these medical forums play an important part in building good public relations by bringing the doctors and their patients closer together. This is being manifest in hundreds of favorable comments. Thanks to all who play a part—large or small.

The Latter-Day Saints Hospital in Salt Lake City recently announced new chiefs of medical divisions at the hospital.

The new department heads are: Vincent L. Rees, M.D., Surgery; Alan P. Macfarlane, M.D., Internal Medicine; M. S. Sanders, M.D., Obstetrics and Gynecology; Spencer Snow, M.D., Pediatrics; and Eugene Y. Hall, M.D., General Practice.

Other matters discussed at this dinner-meeting were the hospital's $2 million construction program during 1955, statistics on deaths in childbirth (no maternal deaths in 1955), and committee reports.

Heart Association Meeting

The 32nd Annual Meeting and 29th Annual Scientific Sessions of the American Heart Association will be held in Cincinnati, Ohio, October 27 through 31.

Those wishing to present either papers or scientific exhibits at the sessions must submit abstracts or make application to the Association's Medical Director no later than Tuesday, May 15. Additional information can be had by writing American Heart Association, 44 East 23rd Street, New York, N. Y.

The Utah Chapter of the American Academy of General Practice announces its 8th Annual Meeting, April 12, 13, and 14, 1956, at the Hotel Newhouse, Salt Lake City. The program includes a symposium on Pediatrics April 12 and 13. Further details will follow in the next issue of the Bulletin.

Francis D. Moore, M.D., Surgeon-in-Chief, Peter Bent Brigham Hospital in Boston and Moseley Professor of Surgery at Harvard University Medical School, will be the speaker for the March 12th monthly meeting of the Salt Lake County Medical Society, in Moreau Hall at the Holy Cross Hospital.

The title of his talk will be, "Hormones and Operations in the Treatment of Carcinoma of the Breast."

Dr. Moore will deliver a paper before the Salt Lake Surgical Society entitled, "Some Unusual Metabolic Problems in General Surgery Practice." This will be a dinner-meeting March 13, 1956, at the Hotel Utah. All doctors in the state are invited to attend.

OGDEN SURGICAL SOCIETY
ELEVENTH ANNUAL MEETING,
May 23, 24 and 25, 1956

Scientific meetings will be held at the Ogden Theater, 420 25th Street. The following doctors have been obtained as guest speakers: **John Adriani,** Director of the Department of Anesthesia, Charity Hospital of Louisiana, New Orleans. **Janet S. Baldwin,** Associate Pediatrician and Chief of Children's Cardiac Clinic, Lennox Hill Hospital; New York City. **Henry Brainerd,** Pro-

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fessor of Medicine, University of California, San Francisco. **Frank Hinman, Jr.,** Associate Clinical Professor of Urology, University of California Medical Center, San Francisco. **Donald R. Laird,** Associate Professor of Surgery, University of Oregon, Portland, Oregon. **George D. Lilly,** Attending Surgeon in Charge, James M. Jackson Memorial Hospital, Miami, Miami Beach. **Herbert C. Maier,** Assistant Clinical Professor Surgery, Columbia, Physicians and Surgeons; Chief Surgeon, Lennox Hill Hospital, New York City. **Waldo E. Nelson,** Professor of Pediatrics and Medical Director, Temple University School of Medicine, Philadelphia. **Alton Ochsner,** William Henderson Professor of Surgery, Tulane University, New Orleans. **Newell W. Philpott,** FRCS, FRCG, Professor of Obstetrics and Gynecology, McGil University, Montreal, Quebec. **E. H. Rynearson,** Professor of Medicine, Mayo Foundation, Graduate School of Medicine, University of Minnesota, Rochester, Minnesota. **E. Stewart Taylor,** Professor and Head of Department of Obstetrics and Gynecology, University of Colorado, Denver. **Preston A. Wade,** Professor of Clinical Surgery, Cornell University Medical College, New York City. **Waltman Walters,** Head of Division of Surgery, Mayo Clinic. **Sir Reginald Watson-Jones,** Orthopaedic Surgeon to Her Majesty the Queen; Director of Orthopaedic and Accident Service, The London Hospital, London, England. **Richard Warren,** Associate Clinical Professor of Surgery, Harvard Medical School, Boston.

Informal parties will be held on Wednesday and Thursday evenings for all who have registered and their wives. Social events will be arranged for the ladies in attendance.

Make hotel registrations at once through the Chairman of the Registration Committee, Dr. L. D. Nelson, Washington Terrace, Ogden, Utah.

News Briefs

WYOMING AMERICAN MEDICAL ASSOCIATION DELEGATE HONORED

During the annual clinical session of the A.M.A. held in Boston in November, 1955, Dr. W. Andrew Bunten of Cheyenne, and Wyoming delegate to the A.M.A., was honored. At a meeting of the Aces and Deuces, along with three other Past Chairmen, Drs. John L. Farrell, R. F. Peterson and Bruce Underwood, he was presented a certificate as a Past Chairman of that organization. The Aces and Deuces organization consists of

(Continued on Page 325)

Erythromycin in treatment of pyoderma*

8/12/55

DISCHARGE SUMMARY

Patient, white female, age 39, entered hospital with a diagnosis of lymphoma, proved to be lymphosarcoma by biopsy.

Initially she was treated by X-ray radiation, adrenal cortical hormone and an antinauseant. During this regimen she developed a generalized rash which became infected. This was a drug reaction with infection due either to (1) scratching or (2) a low WBC count due to radiation. A number of boil-like lesions appeared over the body.

On 8/4 penicillin was started in a dosage of 600,000 units daily. Penicillin was continued for six days during which time the pyoderma became worse.

Aspirated material from the lesions yielded hem. S. aureus, coag. + and the following sensitivities were obtained: penicillin, more than 10 units; erythromycin, 10 mcg.; tetracycline, 50 mcg. When these results became available penicillin was discontinued.

On 8/9, erythromycin was started in a dosage of 200 mgm. q. i. d. Marked improvement was noted very soon and by 8/12 almost complete healing of all lesions had occurred. Patient was afebrile throughout.

Final Diagnosis: (1) lymphosarcoma (2) secondary pyoderma due to hemolytic Staphylococcus aureus.

Result: complete healing of secondary pyoderma with erythromycin.

*Communication to Abbott Laboratories

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delegates of those states having one or two delegates to the A.M.A. House of Delegates.

The Wyoming Department of Public Health has released its annual list of Wyoming physicians delivering 100 or more live babies in the preceding year. The figures are for the calendar year 1955, and the list includes 20 physicians.

Leading physicians in Wyoming for number of 1955 babies are:

1. Young, Clark M.	Casper	252
2. Wellington, Charles J.	F. E. Warren AFB.	225
3. Travis, Bane T.	Cheyenne	216
4. Hendrix, Sam W.	F. E. Warren AFB.	213
5. Bowden, Robert H.	Casper	200
6. Sullivan, Bernard J.	Laramie	190
7. Shwen, Ralph O.	Cheyenne	187
8. Roberts, K. N.	Casper	175
9. Kattenhorn, Lowell D.	Powell	154
10. Schleyer, Otis	Cheyenne	140
11. Harrison, G. Myron	Rock Springs	139
12. Engelman, A. A.	Worland	139
13. Moles, Marvin R.	F. E. Warren AFB.	134
14. Ashbaugh, Ralph D.	Riverton	133
15. Wild, John J.	Sheridan	129
16. Croft, Thomas B.	Lovell	127
17. McNamara, Edward W.	Rawlins	125
18. Giovale, Silvio J.	Cheyenne	120
19. Hart, Wilber	Casper	107
20. Halsey, Guy M.	Rawlins	101

The Book Corner

New Books Received

New books received are acknowledged in this section. From these, selections will be made for reviews in the interests of the readers. Books here listed will be available for lending from the Denver Meaical Library soon after publication.

The Interpretation of the Unipolar Electrocardiogram: By Gordon M. Myers, M.D., Professor of Medicine, Wayne University College of Medicine. Published by C. V. Mosby, St. Louis, 1956. 164 pages, illus. Price: $4.75.

Hand Book of Toxicology, Vol. 1, Acute Toxicities of Solids, Liquids and Gases to Laboratory Animals: Edited by William S. Spector. Prepared under the direction of the Committee on the Handbook of Biological Data, Division of Biology and Agriculture, The National Academy of Sciences, The National Research Council. Published by W. B. Saunders, Philadelphia, 1956. 408 pages. Price: $7.00.

Pathologic Physiology, Mechanisms of Disease: Edited by William A. Sodeman, M.D., F.A.C.P., Professor of Medicine and Chairman of the Department of Medicine, School of Medicine, University of Missouri, Columbia, Missouri. Published by W. B. Saunders, Philadelphia, 1956. 962 pages, illus. Price: $13.00.

Book Reviews

Collected Papers of the Mayo Clinic and the Mayo Foundation. Volume 46, 1954.

This volume covers the articles emanating from the Mayo Clinic from December 1, 1953, to November 30, 1954, inclusive, which amounts to 629 papers.

The book is divided into the usual bodily systems and the key articles pertinent to each appear in full, abridgement or abstract and amount to 134 papers. The remainder appear by title only under each system.

A particular usefulness of this volume is that it serves as a ready reference for current medical literature. If a sought-for paper does not appear in full it is very probable that reference to same can be found.

WM. H. WIERMAN, M.D.

Present-Day Psychology: An Original Survey of Departments, Branches, Methods and Phases, Including Clinical and Dynamic Psychology: Edited by A. A. Roback, with the collaboration of forty experts in the various fields. New York: Philosophical Library, 1955. 995 pages.

The stated aim of Dr. Roback's book is to achieve a comprehensive view, "not only of the main departments and field [of present-day psychology], but also such often inaccessible areas as are usually neglected." In approaching this Herculean task, the editor has enlisted the aid of some forty collaborators, assigning each the job of summarizing recent trends in his special area of competence.

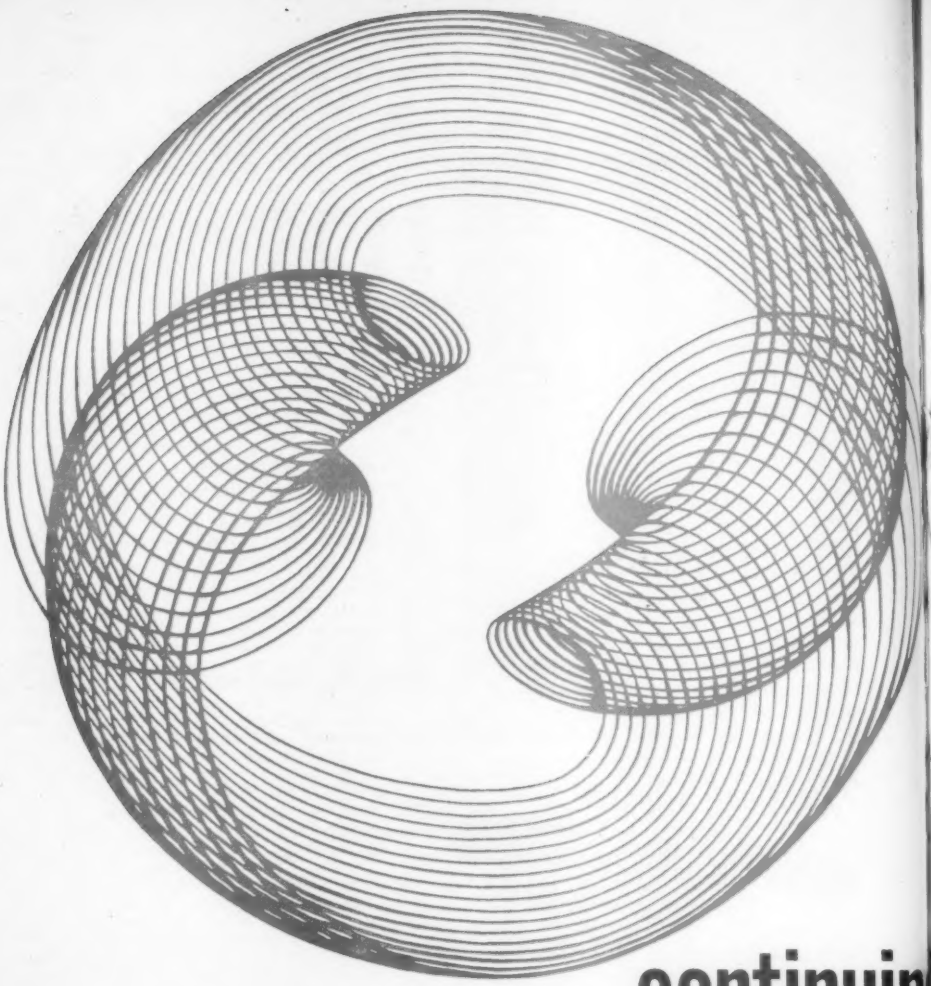
The result is an impressive-sized volume of close to a thousand pages, covering a very wide variety of subject matters. Organizationally, the book is divided into five parts.

Part One is devoted to what Dr. Roback calls "Topical Departments," including chapters on general neurology, sensory psychology, perception, cognition, attention, memory, emotion, personality, and character. Part Two is intended to summarize the current status of the various branches of psychology, including child, educational, military, abnormal, social, comparative, and applied psychology; as well as parapsychology, psychometry, and histories of psychology. Part Three, entitled "Dynamic and Clinical Psychology," contains discussions of recent developments in psycholinguistics, psychotherapy, psychosomatic medicine, and psychoanalysis. It also contains brief chapters on a number of more specialized topics, such as speech pathology, psychodrama and sociometry, and hypnotherapy. Part Four is devoted to brief discussions of a number of statistical and methodological problems in psychological research and theory. Finally, Part Five, entitled "Psychological Borderlands and Humanistics," is intended to deal with "those topics which are not sufficiently advanced or extensive to be regarded as full branches, and have not been treated as such in general textbooks." Here are included discussions of the psychologies of art, literature, religion, and values.

It is obviously impossible in a book of this size and scope to review each of the various contributions separately. However, a number of general comments appear relevant.

In the first place, this reviewer is struck by the extreme uneveness of the book, as one proceeds from chapter to chapter. Although Dr. Roback extols the merits of "the collective volume, in the sense of a symposium," where "everyone contributing has been instructed with a task, and all are working toward a goal as conceived by the editor"—as opposed to the usual type of anthology, there is little consistency in either the comprehensiveness, technical level, or quality and clarity of the writing in the various chapters. For example, the discussion on "Recent Findings in General Neurology" by Keegan

(Continued on Page 329)



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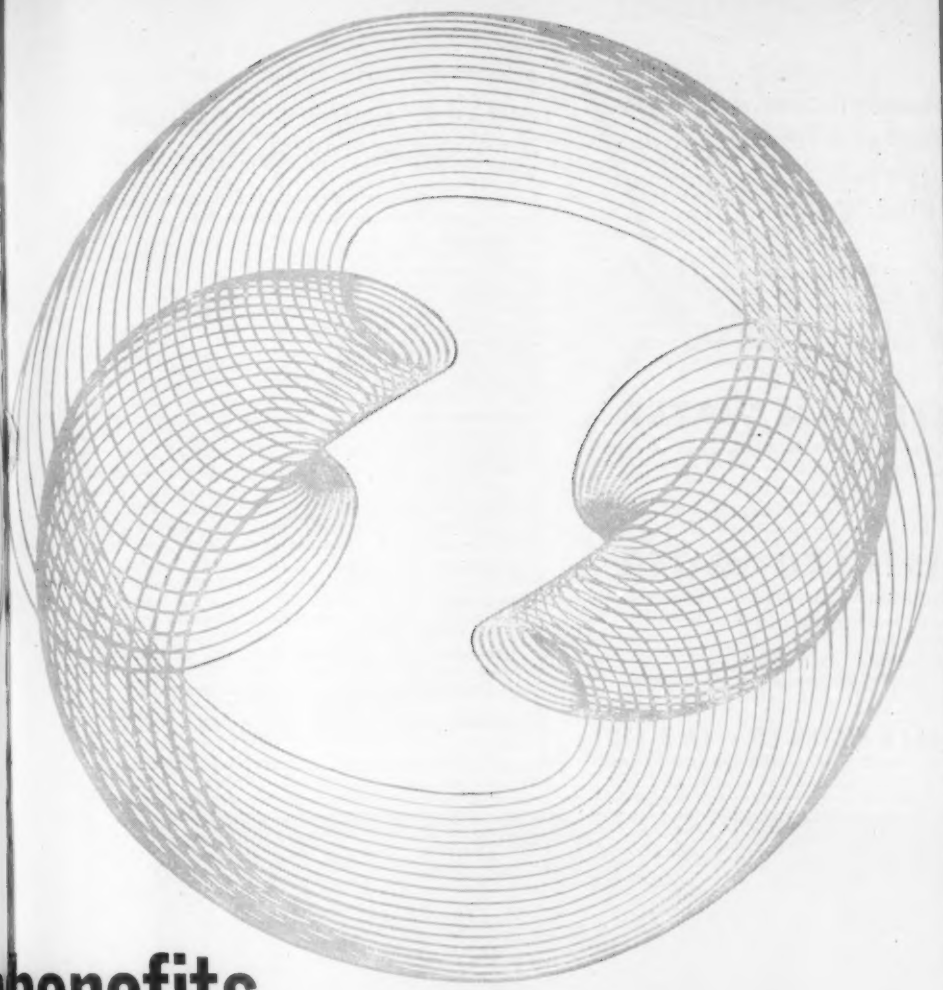

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assumes a considerable familiarity, on the part of the reader, with basic research in neurophysiology and neuroanatomy. On the other hand, the chapter on "Child Psychology" by Anderson could be read with ease—if not with overly great enlightenment as to current developments in this field—by the general reader.

Some chapters consist of little more than an extensive bibliography, though at times a comprehensive and useful one, of current research in a particular field. In sharp contrast, other chapters are devoted almost exclusively to discussions of the author's own highly specialized research in some area, thus excluding any consideration of developments in the field as a whole.

Several chapters represent little more than random polemics against the writer's pet scientific peeves with little attention either to organized exposition of a point of view or literary clarity. Two of Doctor Roback's own chapters strike this reviewer as particularly painful examples of this tendency.

Dr. Roback specifically eschews the value of modern learning theory and "other mechanistic schools," and has chosen to ignore them in this presumably comprehensive volume in favor of more "dynamic" approaches to psychology. However, the reader is likely to become rather confused as to what attitude he is supposed to take toward these "more dynamic" approaches. Thus in the chapter on abnormal psychology of the child, Dr. Ernest Harms, editor of The Nervous Child, refers to an over-emphasis in psychoanalysis on "almost meaningless abstract concepts like that of infantile sexuality." On the other hand, in a later chapter, Dr. James Moloney argues vigorously for the notion that in too early bowel training, the mother becomes, in the child's eyes, "adherent at the rectum, becomes adherent in the active form of rectal rigidity and restriction and spasm." While the expression of such contradictory viewpoints as this—and there are many of them in the book—is not in itself to be condemned, it does not support the book's claim of presenting an integrated approach to the subject matter at hand.

Despite these criticisms of the book as a whole, there are a number of thoughtful chapters which can be read with real profit by the appropriately prepared reader. Among these, this reviewer was particularly impressed by the chapters on emotion by Magda Arnold, on perception by Paul Bakan, and on cognition by Theodore Karwoski. The brief chapter by Leon Saul and Andrew Watson, entitled "Milestones in Psychoanalysis," while sketchy, points up clearly some of the factors which have tended either to advance or restrict the development of this field. Philip Ratoosh presents an effective and well-written, if condensed, survey of issues and results in sensory psychology for the adequately prepared reader. In addition, the chapters by Milton Kline on hypnotherapy and James Hartman on psychosomatic medicine can be employed effectively for bibliographical reference, though the Hartman chapter is rather superficial from the standpoint of theory.

However, as an over-all summary of the present status of the field of psychology, either for the general physician, the psychiatrist, or the professional psychologist, this book cannot be enthusiastically endorsed.

JOHN J. CONGER, Ph.D.,

Bone and Bones—Fundamentals of Bone Biology: By Joseph P. Weinmann, M.D., College of Dentistry, University of Illinois, formerly at School of Dentistry, Loyola University, Chicago; and Harry Sicher, M.D., D.Sc., School of Dentistry, Loyola University, Chicago.

This book has an excellent bibliography. A somewhat different and refreshing approach to the problems of bone structures and bone growth is presented. The authors are from the school of dentistry and, therefore, many interesting observations are made about teeth in generalized skeletal diseases. There is an interesting chapter on "Adaptional Deformities of the Skeleton." The chapter on "Tumors of the Skeleton" provides a brief discussion of bone tumors, but it is not complete enough to warrant its inclusion in this volume. This is a very good reference book and nowhere else can so much information about bone physiology, biochemistry and development be found gathered in one volume.

R. L. GUNDERSON, M.D.

Perinatal Mortality in New York City, Responsible Factors. A Study of 955 Deaths by the Subcommittee on Neonatal Mortality, Committe on Public Health Relations, the New York Academy of Medicine: By Schuyler Kohl, Cambridge, Mass.: The Commonwealth Fund, Harvard University Press, 1955. xxi, 112 p.

This report is that of the second and final phase of an intensive study of infant mortality in New York City started in 1948, by the committee mentioned in the title. Perinatal mortality is examined in many aspects, e.g., weight, age at death, color, sex, age and parity of mothers, month of death and place of birth. The preventability of the deaths is studied with particular reference to errors in management. The quality of obstetrical care is subjected to critical analysis. The role of analgesia and anesthesia is discussed. The most important section of this book deals with the causes of death. These causes are analyzed as they relate to the type of professional service responsible. The last chapter consists of an excellent summary of the study with suggestions that may be of value to a future investigator in the preparation of a similar study.

ROBERT W. COLLETT, M.D.

Breast Cancer and Its Diagnosis and Treatment: By Edward F. Lewison. Williams and Wilkins Company.

In compiling this volume on breast cancer with its many and varied aspects, the author has combined his own efforts with those of a number of contributors. The result is most satisfactory.

The first chapter presents the history of breast cancer in a thorough and interesting manner, a distinct improvement over the usual brief gesture of so many authors. Ensuing chapters deal with the surgical anatomy and physiology of the breast in considerable detail. J. J. Bittner has written a chapter on the experimental aspects of mammary cancer in mice. He states that it is doubtful if data could be secured to demonstrate a MTA (mammary tumor agent) in the development of human breast cancer. The viral or virus-like factor has been quite clearly demonstrated in mice. The pathology of breast cancer is well presented by R. C. Horn, including a simple, concise classification quite similar to that advocated by Fred W. Stewart in his Armed Forces Institute of Pathology fascicle "Breast Cancer." Horn classifies 76-77 per cent of infiltrating carcinoma as "carcinoma of no special type." Certainly the great majority of these are infiltrating duct carcinomas. The chapter on diagnosis is well done, including a fair discussion of the useful but oft maligned procedure of aspiration biopsy. A great deal of space is devoted to surgical treatment, includ-

ing a chapter by J. A. Urban on extended radical mastectomy, with emphasis on the problem of the high percentage of metastatic involvement of internal mammary lymph nodes from carcinomas located in the medial breast quadrants. Radiotherapy is well presented by V. P. Collins, who clearly outlines the various goals of this method of treatment. There is a particularly good chapter by R. A. Huseby on palliative hormonal therapy. Final chapters deal with cancer statistics in detail.

In summary, Breast Cancer is an excellent compilation with much specific information that should prove valuable to anyone interested in the subject.

W. D. MILLETT, M.D.

Why Patients See Doctors: By Standish-Bennett-White-Powers. 96 p., University of Washington Press, 1955. Price: $2.50.

This is an exhaustive analysis of a comprehensive survey of patient visits in the State of Washington in 1953. About 1,100 physicians and osteopaths reported 73,188 patient visits. These contacts are analyzed from all possible points of view, compared with other, less extensive surveys and, most interestingly, statistically compared with the reported "Causes of Death."

The third sentence of the "Preface" will startle the reader: ". . . it was found that conditions not directly related to illness were one of the most common reasons for visiting the doctor." But "Appendix Table 9" analyzes those patient visits and if one eliminates those patient visits which most certainly provided the patient with professional judgment from the doctor only 2,373 visits are left (out of a total of 11,842) to be classified as non-professional—maybe.

Washington state has one abortion-miscarriage for each three live births!

Very interesting for casual reading; very valuable for the statistically inclined.

L. T. BROWN, M.D.

Medical Microbiology: By Ernest Jawetz, Joseph L. Melnick and Edward A. Adelberg.

The authors attempt to make a brief and up-to-date presentation of medical Microbiology, and succeed rather admirably. The book is primarily one for the intern-resident and the practicing physician who occasionally has need for information regarding microbiology.

The material is well organized, and the index is quite adequate. It is not to be used as a reference book, but as a ready source of information in the every-day practice of medicine as it is related to microbiology.

ROBERT E. HAYES, M.D.

Pathology for the Surgeon: By William Boyd, M.D. Publisher: W. B. Saunders Co., Philadelphia, 1955.

The "poet laureate" of pathology has again created a masterful work and fine contribution to pathology. For thirty years Boyd's "Surgical Pathology" has been the leading text on surgical pathology for both the surgeons and pathologists. It has only been within the last decade that other rival texts in this field have appeared on the scene. Dr. Boyd decided that it was time to perform "plastic surgery" on the original text which had undergone six editions and had been translated into three foreign languages. This text is the result and it decidely has a "new face."

Dr. Boyd has revised and rewritten most of the text but in spite of this it remains as readable and as enjoyable as the original. The historical notes give valuable background and are entertaining. Numerous new illustrations have been added. Most of them are in black and white; however, several new, well-known color plates have been added. The clinical pathological correlation is excellent and therefore should continue to be as attractive and as valuable to the surgeon as it has been in the past. The pathologist will find a valuable source of information, not so much from the pure pathologic anatomy but from the clinical surgical material. New chapters have been added on wound infections, the soft tissue, the skin, the endocrine gland and the cardiovascular system. As the author points out, in rewriting this volume, he has kept in mind the graduate rather than the undergraduate, the surgeon rather than the pathologist, the young rather than the old. I would be inclined to be more liberal than the author and recommend this volume as a valuable reference for both the surgeon and the pathologist, the senior students, the interns and residents, and I am certain that the "old" would find it most refreshing.

Textbook of Biochemistry: By E. S. West and W. R. Todd. Second edition. Macmillan, New York, 1955.

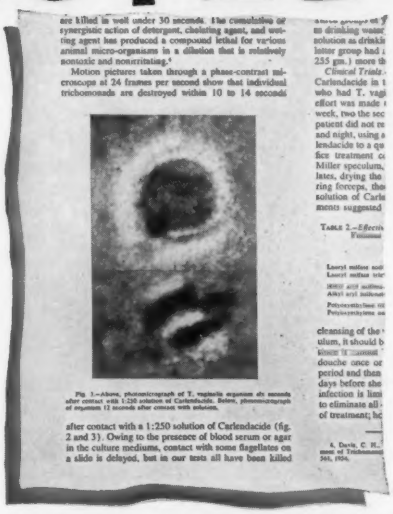
This text has been revised and rewritten extensively, while over-all size is retained. Newer concepts of coenzymes, nucleic acids, hormones, porphyrins, folic acid and B_{12}, and metabolism, are included. West and Todd enjoys wide use as the text for biochemistry in medical school teaching, and this revision has brought it up to as recently as can be included in a printed text. References are given in very adequate numbers, of two classes, general and

(Continued on Page 335)

DESTROYED

"... INDIVIDUAL TRICHOMONADS ARE DESTROYED WITHIN 10 TO 14 SECONDS AFTER CONTACT WITH A 1:250 DILUTION [VAGISEC LIQUID]."

Davis, C. H.: J.A.M.A. *157*:126 (Jan. 8) 1955.



are killed in well under 30 seconds. The cumulative or synergistic action of detergent, chelating agent, and wetting agent has produced a compound lethal for various animal micro-organisms in a dilution that is relatively nontoxic and nonirritating.[4]

Motion pictures taken through a phase-contrast microscope at 24 frames per second show that individual trichomonads are destroyed within 10 to 14 seconds

Fig. 1.—Above, photomicrograph of T. vaginalis organism six seconds after contact with 1:250 solution of Carlendacide. Below, photomicrograph of organism 12 seconds after contact with solution.

after contact with a 1:250 solution of Carlendacide (fig. 2 and 3). Owing to the presence of blood serum or agar in the culture mediums, contact with some flagellates on a slide is delayed, but in our tests all have been killed

In his new *J.A.M.A.* article, Dr. Carl Henry Davis reviews his experience with the new trichomonacide which he and C. G. Grand, research physiologist, developed under the name of "Carlendacide." Now available as VAGISEC jelly and liquid, it has been shown on clinical trial to clear up even stubborn cases of vaginal trichomoniasis. "Adequate office and home treatment can effect a cure of T. vaginalis infections, if limited to the vagina, within four weeks."[1]

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Bibliography

1. Davis, C. H.: J.A.M.A. *157*:126 (Jan. 8) 1955. 2. Davis, C. H.: Am. J. Obst. & Gynec. *68*:559 (Aug.) 1954. 3. Davis, C. H.: West. J. Surg. *63*:53 (Feb.) 1955. 4. Davis, C. H.: J.A.M.A. *92*:306 (Jan. 26) 1929.

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special. The first are authoritative reviews, monographs and texts, sometimes giving historical background for a subject, while the second are specific journal papers as cited in the text. Charts, formulae, equations, figures and tables are given to clarify and simplify the story. Indexing is quite detailed and very adequate. Kinestics and energetics are given their proper stress.

This text has as good balance of subject material, is as brief as is consistent with controversy and historical development, and is as clearly written as any on the market today.

RUSSEL O. BOWMAN, Ph.D.,
St. Luke's Hosp., Denver.

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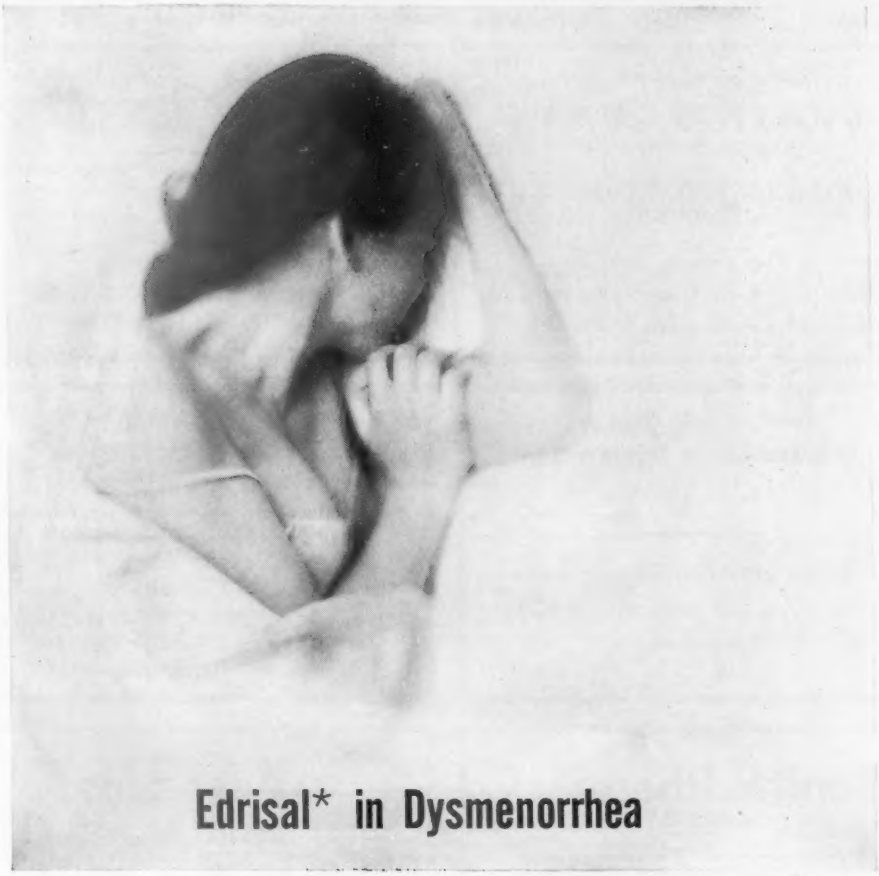

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1. Medical Gynecology, ed. 2, Philadelphia, 1950

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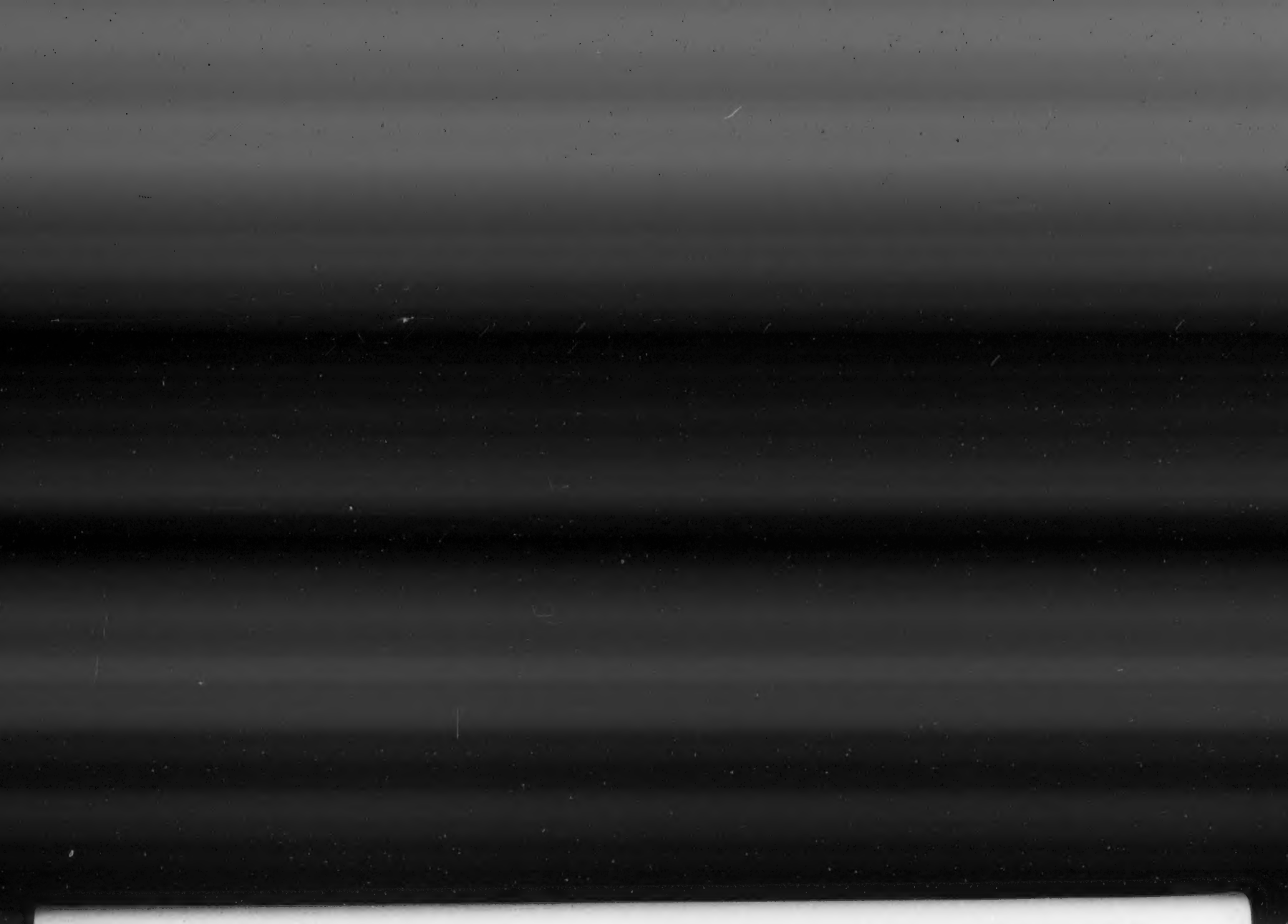

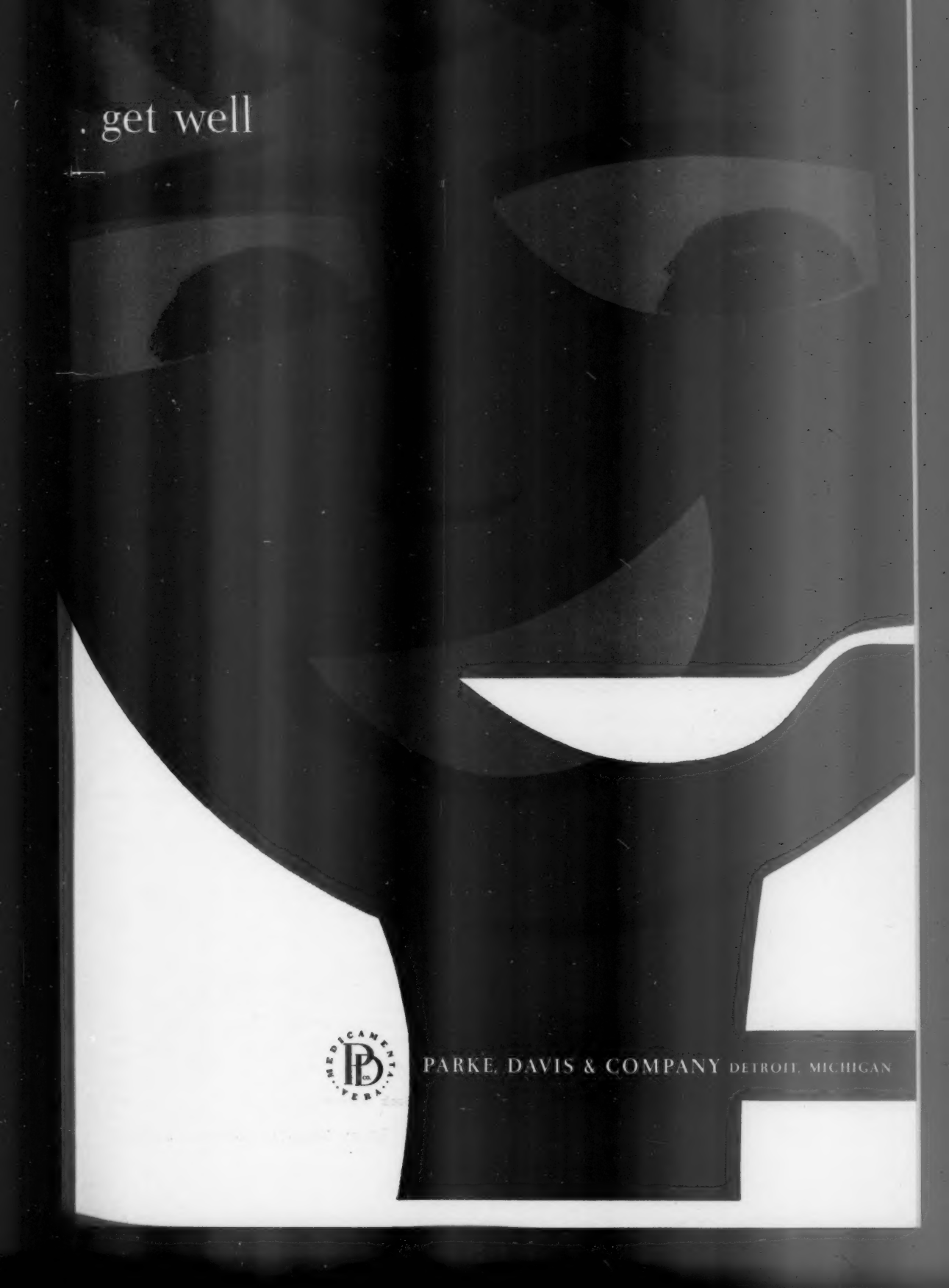
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